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# INDIA RUBBER WORLD

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GUTTA-PERCHA  
 DIODOROS GUTTA

Edited by HENRY C. PEARSON—Offices, No. 150 Nassau Street, NEW YORK.

Vol. XXVI. No. 4.

JULY 1, 1902.

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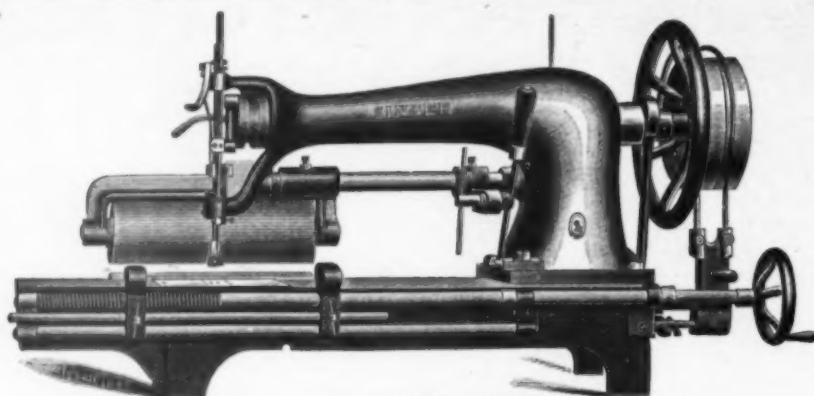
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Published on the 1st of each Month by

## THE INDIA RUBBER PUBLISHING CO.

No. 150 NASSAU ST., NEW YORK.

HENRY C. PEARSON,  
EDITOR.HAWTHORNE HILL,  
ASSOCIATE.

Vol. 26.

JULY 1, 1902.

No. 4.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank draft, Post Office Order; or Express Money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Post order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

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Entered at New York Post Office as mail matter of the second-class.

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## THE TRUST TO BLAME.

NOT the "Rubber Trust" this time, but the Cotton Duck Trust, which, according to the statement of many, is directly responsible for the high price of cotton duck. To be sure, experts point out that raw cotton in the South to-day is quoted at 9½ cents, as against 7 cents a few months ago, but that makes no particular difference, as it is easy, natural, and pleasant to blame the "trusts" for all commercial ills. This is due in a measure, perhaps, to the attitudes of the individuals who are called to manage the different departments in these great corporations, for particularly when new there is a lack of individual responsibility and a feeling of enhanced greatness which the public at large, and customers in general, are quick to appreciate and resent. The writer does not charge the very able officers in the cotton duck trust with any such attitude, yet its existence seems to be resented and rumors of new cotton mills are constantly in the air. However wisely and righteously a trust, duck or other, be run, therefore, it can hardly hope for the cordial liking that individual companies enjoy, nor can it fail to put a premium on the building of new mills and the creation of increased competition.

## THE STATE OF THE AMERICAN TRADE.

THE growth of the India-rubber industry in the United States, which has been continuous since the first introduction of vulcanization, appears from the latest decennial census—to say nothing of more concrete and ever present indications—to proceed without any sign of abatement. This is not only encouraging to those whose money is invested, and to those who live by working in the rubber factories, but it is of interest in contrast with the lack of similar expansion in this industry in some other countries. In seeking a reason for the more satisfactory condition of the rubber trade on this side of the Atlantic, it is not sufficient to point to the skill and ingenuity manifested in the factories or the enterprise shown in the financial and selling departments, for in regard to these qualities no monopoly is possessed by Americans. The situation which exists is common to the industries of this country, and, instead of being exceptional, the rubber branch and its growth are only typical of general conditions.

In the first place, the United States are a new country, with large areas still sparsely settled, and others as yet not settled at all. There is room, therefore, for a long continued growth of population from abroad, such as has been in progress from the birth of the nation, and an increase in population in itself affords a basis for an expanding trade. Besides, the average buying power of the people as a whole has always been large, as compared with that in some older countries, and tends to increase rather than diminish; the normal condition of the population is that of possessing an income beyond the limits of subsistence, leading to a wide demand for and distribution of innumerable classes of industrial products. Until, therefore, a check occurs to these generally progressive

tendencies, a field will exist at home for an expanding industrial output, not to mention the success which lately has attended the efforts to build up an American export trade.

The use of rubber goods in the United States has become very widespread. Some product or other of the rubber industry is on sale in the stores or shops of the smallest and most remote hamlet, as well as in the largest cities. And the sale of rubber goods in every class increases, in many cases more rapidly than the growth of population. Besides, no important use of rubber has once been begun which has not been continued. The manufacture of rubber footwear was the first branch of the industry to be developed, and probably more rubber boots and shoes—including rubber soled shoes—will be made this year than ever before. Rubber belting and hose came into use later, and these too grow steadily in volume of consumption. Once a consumer of such goods is to remain always a consumer, besides which a demand is constantly arising in new fields. The erection of waterworks in many new towns each year widens the demand for garden and other hose such as is used to advantage only in the vicinity of waterworks. The organization of a fire department in a new town at once calls for more fire hose. The extension of railways and their equipment adds yearly to the demand for air brake hose and other rubber products. In new mines and engineering development air or steam hose for drilling work is required; new electrical installations call for rubber covered wire; the number of rubber tired vehicles increases; and the list might be extended to fill this page. Not only does every existing demand for rubber bid fair to continue, but every new mechanical development seems to call for rubber in some new auxiliary capacity—the result of all of which is the continual establishment of new factories and the expansion of old ones.

No doubt some day the United States may become so thickly peopled that no room will exist for more population. Possibly the means of gaining a livelihood for the average individual will become restricted, and the masses will have less money to spend. And many other things may happen a few centuries hence which would not be favorable to the rubber industry as now conducted. But there is no need for anyone to lie awake nights to predict these things; the rubber manufacturers to-day have enough to do to meet the demand for their products.

#### SOUTH AFRICA AND TRADE.

THE end of the war in South Africa is welcome news to the whole business world. However devastating war may be, the coming of peace brings an era of new effort, followed often by greater material development than before seemed possible—provided that the country in question possesses sufficient natural resources and advantages. It is of course plain how Great Britain, relieved of the financial drains caused by the war, and the check upon industry caused by the withdrawal of so many workers for military and incident services—and the more cheerful and hopeful temper of the people, now that the war is over—

should experience an improved condition of trade in many lines.

All of this is without reference to British investment interests in South Africa. These, too, have a brighter outlook, now that hostilities have ceased, and a similar condition exists with regard to the investments of other countries—some of them large—in the same region. There is no doubt that the financial depression in Germany, of which so much was heard last year, was accentuated by the falling off of the returns from German money invested in the Boer country.

Every country engaged in the sale of products and commodities in South Africa, of course, has suffered from the reduced demand resulting from the war. Freight rates even in remote channels of commerce have been unfavorably affected by the diversion of British merchant vessels to her transport service. And doubtless in many other ways industrial and commercial interests have suffered in countries which, at first thought, might be supposed to have had no concern in the war that has just terminated. But there is no longer any country—any civilized country, at least—so far isolated from the community of nations not to feel an injury to any other nation or its trade.

Peace, then, means universal benefit, and to the United States not the least of all. While little American capital has been invested in African mines and other recent developments, and while our direct trade with South Africa has not been large, yet the indirect exports thither had become important before the war, and with the return of buying power to that region the United States will stand an even better position than before to compete with Europe in supplying demands there. Nor is the south of Africa—or, for that matter, much more of Africa—always to remain an insignificant part of the commercial map of the world. The country so long under the conservative rule of the Boers has the qualities of soil and climate, to say nothing of natural wealth, that must appeal strongly soon to countless Europeans now crowded for room in their own countries, and who, now that they will be more welcome, will seek the opportunity to go there and found new populous and prosperous communities, under conditions more like those under which some of the great western American states were settled than can now be found anywhere else on the globe.

#### OBSTACLES TO PROGRESS IN BOLIVIA.

THE late Collis P. Huntington, of New York, when he undertook to establish a transcontinental railway system, began by acquiring a number of short lines, some of them of small or merely local consequence, with the idea of uniting them in one great line. A traveler one day on one of the smallest of these roads, the trains of which stopped on every trip to allow a handful of passengers to regale themselves at the little hostelry of one John Heller, asked a lounging villager for his views of the changed conditions in prospect, the details of which were just getting into print. The villager listened vacantly un-

til mention was made of trains on their way from ocean to ocean not stopping for meals, and then remarked:

"That would be mighty hard on John Heller."

Doubtless this particular Heller long ago retired from business, but many more of his kind remain—not all inn keepers, but all with neighbors incapable of taking a broader view of a projected great development than that it would be "mighty hard on Heller." For example, there are people, and even newspapers and statesmen, in South America to day, talking frantically—talking about war—because Bolivia has entered into a contract with citizens of a foreign country for the development of a broad rich tract of land which, without aid from the outside, would likely remain for another century in as backward a state as has existed since the days of Christopher Columbus.

The Acre and its branches, from all reports, are rich in rubber of the highest quality, for which consumers are ready to pay liberal prices. There are minerals in the same district, for which a market is also ready. Soil and climate are fitted for the local supply of the food products needed by laborers, instead of their being imported, as at present. But none of these resources or advantages can be availed of under existing conditions, and the government of Bolivia has determined, since her own people cannot do more, to let others have a chance, under conditions that will allow all hands to profit.

It will be interesting to see whether the consideration that conditions of modern enterprise in equatorial South America might be hard on the local John Hellers will be potent enough to prevent the carrying out of plans upon which Bolivia ought to be congratulated, instead of being abused for having adopted them.

**RIOT HOSE.**—This type of hose has not as yet been announced by any rubber manufacturer, but there seems to be, nevertheless, a distinct call for it. It should, preferably, be red; it should be flexible, easy to handle, and its market would be found in anarchistic centers, such as Paterson, Chicago, and wherever riotous strikers are wont to congregate and make mischief. Even ordinary fire hose quelled a very serious riot in Paterson only a few days ago. If, then, riot hose were placed in the hands of the authorities and mill owners, and if to the clear water a little soap were added, our manufacturing centers might soon be cleansed from anarchy and its universal concomitant—dirt.

**THE DEFEAT OF THE PACIFIC CABLE BILL** in the house of representatives at Washington on June 11 ends all hope of legislation on this subject in the United States in the near future. The failure of the government to take part in providing for cable communication across the Pacific will not prevent such communication from being established, for work is already in progress on a cable to connect San Francisco with Honolulu, to be operated by a company who assert their intention to extend their line to Manila, and that without asking any financial support or special privileges from the government. But this cable is being made in England, whereas any cable built with government aid would be required to be made in the United States, and so large an initial order would lend great encouragement to the building up of the submarine cable industry in this country. There yet remains much work in cable construction, however, to supply the growing demand for tele-

graphic communication all over the world, and it may be that American factories will yet be found in a position to compete for such work, although up to date this industry has not become established in any country without having had the benefit of important orders directly or indirectly supported by government aid.

"THERE IS TOO MUCH MONEY invested near home," is asserted in a rubber planting prospectus lately mailed from Chicago to many clergymen; "the great opportunities are at a distance, not at our doors." This is something which had not occurred to many people, and it may be, after all, that what is ruining the country is not the "trusts," or the professional politicians, or rum, but the fact that people with money to invest don't send it far enough away. But this Chicago economist is ready to remedy all that. Plant rubber in Mexico. It is the surest way on earth to make money. Plant rubber, and you can't help getting rich. "It has been demonstrated by our experience," says the circular sent to the preachers, "that when a young [rubber] tree is fairly started, there is but one way to kill it, and that is to dig up the roots. A rubber tree may be broken off or cut down, and the ground burned over, and another tree will spring up from the roots." The Chicago circular writer probably thought it unnecessary to add that when a rubber tree has matured it can't be prevented from yielding rubber, and it is impossible to keep the rubber from getting to market and selling at high prices. A rubber tree is more persistent than original sin.

A RUBBER PLANTATION COMPANY has been organized in New York city, the capital of which is expected to be subscribed entirely by the teachers in the public schools. It is reasonable to expect, if such profits are realized as the prospectus promises, that the teachers will not long continue in their present positions after their dividends become due.

IN THE SEVEN RUBBER MANUFACTURING STATES for which census bulletins have been issued to date, the value of rubber goods produced in the census year (ending June 30, 1900) amounted to \$87,172,694, not including the output from several factories, the details for which, under the classification adopted in the census office, could not be given in bulletins by states without rendering it possible to identify certain factories. When the whole tabulation has been made, including the returns from a few other states, it seems probable that a total production of at least \$100,000,000 will be shown. The total production by the census of 1890 was only \$42,853,757. In 1890 the total investment of capital in the rubber industry was reported at \$26,392,965, whereas in 1900 the capital so invested in Massachusetts alone amounted to \$26,542,446.

#### "THE PRICES OF RUBBER GOODS."

TO THE EDITOR OF THE INDIA RUBBER WORLD: I have just read the letter of Mr. J. Bennett Forsyth, general manager of the Boston Belting Co., which appeared in your issue of June 1. I may say that as soon as I read your editorial for May regarding the prices of rubber goods, I immediately had it reprinted on slips and sent to customers. I also thought it advisable to have copies forwarded to other manufacturers, in case your article might have escaped their notice.

I think this will show that, like Mr. Forsyth, I attached value to your article and greatly appreciated it. Yours faithfully,

JOHN COOPER,

London, June, 13, 1902.

Managing Director, The Dermatine Co., Limited.

## CENSUS OF THE BICYCLE INDUSTRY.

THE bicycle industry in the United States as it existed in 1900 forms the basis of a separate Bulletin of the census for that year, lately issued as No. 176. The number of bicycle factories in operation during the year ending June 1, 1900, was 312, located as follows:

Maine.....1	Pennsylvania.....24	Wisconsin.....23
New Hampshire..1	Maryland.....1	Minnesota.....4
Massachusetts...25	Kentucky.....1	Iowa.....1
Rhode Island....4	Ohio.....34	Nevada.....1
Connecticut.....24	Michigan.....11	Colorado.....1
New York.....66	Indiana.....19	California.....4
New Jersey.....7	Illinois.....60	

The principal details reported regarding these establishments, compared with the corresponding details (for 27 factories) in the census of 1890, were as follows:

	1900.	1890.
Total capital employed . . . . .	\$29,783,659	\$2,058,072
Salaries officials and clerks. . . . .	2,034	128
Salaries paid. . . . .	\$ 1,753,235	\$ 123,714
Wage-earners, average number . . . . .	17,525	1,797
Total wages paid. . . . .	\$ 8,189,517	\$ 982,014
Miscellaneous expenses. . . . .	\$ 2,252,604	\$ 242,018
Cost of materials used . . . . .	\$16,792,051	\$ 718,848
Value of products. . . . .	\$31,915,908	\$2,568,326

Of the total value of products reported in 1900, the sum of \$9,646,875 applies to other articles than bicycles, including chains, spokes, handle bars, saddles, rims, and the like. Undoubtedly as a result of this large production of bicycle parts a good many bicycles were put together in the establishments classed as "bicycle and tricycle repair shops," of which 6328 are considered in the census, but there is no report of the number of bicycles so produced. At the same time, there were 16 establishments, not included in the number mentioned in the preceding table, which reported bicycles as a by product. The production of bicycles, tricycles, and automobiles, by all the concerns reported on, was as follows:

	Number.	Value.	Av. Value.
Bicycles . . . . .	1,182,850	\$23,689,437	\$ 20.03
Individual chainless . . . . .	49,999	\$1,057,399	\$45.59
Individual chain. . . . .	1,136,122	\$1,488,589	\$13.91
Tandem . . . . .	3,640	\$10,360	\$2.85
Motor. . . . .	159	\$9,959	\$62.63
Tricycles (mainly toys). . . . .	26,110	\$71,985	\$2.76
Automobiles . . . . .	56	\$6,788	\$1,085.50

The table does not, of course, relate to any automobiles constructed in other than bicycle factories. The value of custom work and repairing in the bicycle repair shops was \$13,766,033, which, added to the value of products in the bicycle factories, gives a total of \$45,681,941 as the extent of the bicycle industry during the last census year.

THE manufacture of the large number of bicycles reported for the last census year does not imply that an equal number were sold. The market was even then stocked with wheels of earlier production, and it is quite possible that many wheels made in 1900 still await buyers. It long ago became apparent that the productive capacity of the industry had become too great for the domestic demand, but the hope prevailed for awhile that an export market could be found for the surplus production. The largest export figures, however, measured in values, were attained in 1898, since which there has been a steady decline. Before the close of the census year a crisis existed in the industry which called for a radical reconstruction, leading to the formation of the American Bicycle Co., with \$40,000,000 capital, and the control of 35 bicycle factories, besides shops producing parts. That company has gradually concentrated its facilities, and recently divided its business between two subsidiary corporations, one each for the automobile and the bicycle trade, and confining the work in the latter to seven factories.

It is not probable that there are now thirty factories, all told, large and small, making bicycles in this country. From the best indications observed by THE INDIA RUBBER WORLD the production of bicycles in the United States this year will not exceed 600,000. The policy will be pursued, however, of avoiding overproduction, and doubtless better profits will be realized on the wheels sold. At the same time the manufacture of bicycle tires, while reduced in volume, and confined to fewer factories, appears to be conducted on a more satisfactory basis than at times in the past.

## BOLIVIAN SYNDICATE'S PLANS.

ON June 14, Mr. Frederick W. Whitridge, of New York, arrived at home, after a visit to Europe in the interest of The Bolivian Co., the syndicate which has acquired a concession of the Acre rubber district, in Bolivia. It is through Brazilian territory that the Bolivian syndicate must find an outlet for intercourse with the world. The apprehension of the Brazilian government arising from the fact that Americans are obtaining fiscal rights in and police control over so vast a territory in Bolivia, bordering on the territory of Brazil, has created a difficulty which has made international partition and ownership desirable. It is likely that the syndicate will also obtain English, German, and also some Belgian capital. American interests, however, will predominate. While Mr. Whitridge was dealing with the financial interests of the syndicate, Sir Martin Conway, who negotiated the syndicate's concession from Bolivia, was in Berlin explaining the objects of the enterprise to the German foreign office, which, it is understood, will probably forward the aims of the Bolivian syndicate, in which now foreign as well as American capital is interested.

A fact which perhaps is not generally understood, is that while the Amazon river proper is open to navigation by foreign vessels, its tributaries have never officially been declared "open." Brazil may, therefore, deny navigation rights on her waterways which connect the Acre district with the Amazon. A proposed treaty with Bolivia, covering this point, was withdrawn by Brazil on the announcement that the Acre concession had been ratified. The matter to which the international diplomatic support above referred to will relate, is the opening of Brazilian waters to foreign commerce—a result in which the world at large may be expected to feel an interest.

DIPLOMATIC negotiations have lately been in progress between Brazil and Bolivia, as a result of which it is reported that the latter country may be induced to revoke the concession relating to the Acre, and perhaps pay an indemnity to the *cessionnaire* to cover the expenditure involved thus far in relation to it. It is not to be supposed, however, that the concession will be dropped by its holders so long as a possibility exists of keeping it alive. By the way, there is no basis for reports that J. Pierpont Morgan, of New York, and the Rothschilds, of Europe, are interested in the matter.

A ROYAL RUBBER TRUST.—Writing of the rubber gathering situation in the Congo Free State, *The India-Rubber Journal* (London) says: "An enormous Trust, with lesser Trusts acting in direct association with the central Trust, rules the whole vast territory for its own ends, and the managing director is King Leopold II."

HONDURAS exported during the fiscal year 1900-01 rubber to the value of £5836 4s. 1d. and in 1899-1900 to the value of £4874 9s., according to a British consular report.

## FIVE MILES OF RUBBER BELTING IN A GRAIN ELEVATOR.

A NOTABLE installation of rubber belt conveyors is that embraced in the system of grain elevators of the Grand Trunk Railway Co., at Portland, Maine. Within a few years past Portland has become an extensive grain shipping port by reason of the facilities afforded by the

ocean steamers are loaded. There are other galleries connecting the elevators with the yards of the Grand Trunk railway. The total length of the conveyors is over one mile, giving employment to over three miles of rubber belting, and making a system which is asserted to be the most extensive in existence. Each gallery conveyor has a capacity of 15,000 bushels

per hour, making the total carrying capacity of the wharf conveyors 900,000 bushels per day.

The belting for the new elevator was furnished by the Boston Woven Hose and Rubber Co. The total length of conveyor belts in the entire system is approximately 16,500 feet, and that of the elevating belts is 8700

feet. The architects and engineers of the entire system were the John S. Metcalf Co. (No. 804, The Temple, Chicago), who have had charge of the construction of some of the largest elevators in the United States, and also several abroad, including the extensive elevator of the Manchester Ship Canal Co., in England. It is through the courtesy of this firm that the illustrations which appear on this page have been obtained. There are thousands of grain elevators in the United States, and though not so large as the one at Portland, their combined requirements of belting have developed an important special demand, adding largely to the profits of the rubber industry.



BELT CONVEYOR FLOOR.

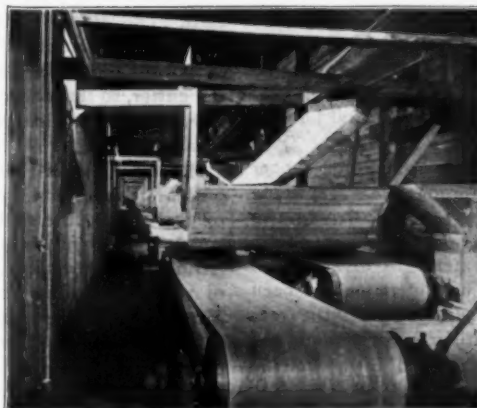


DOUBLE BELT GALLERY.

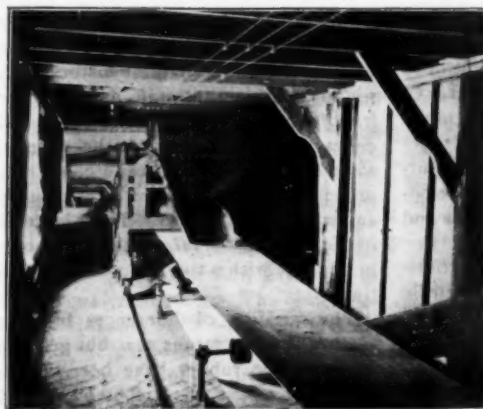
Grand Trunk railway in connection with the increased grain traffic of the Canadian northwest. The system at Portland comprises an elevator with 1,000,000 bushels capacity, completed in 1897, and a 1,500,000 bushel elevator, now ready for operation, which, together with their wharf conveyors, are so connected as to form one establishment.

The elevating equipment gives an unloading capacity from the train yards of 400 carloads of grain per day. The total length of elevator belting employed is 8700 feet. The old elevator is equipped with lifting buckets  $7 \times 7 \times 18$  inches in size, mounted on 20-inch belts, and the new elevator with  $7 \times 7 \times 20$  inch buckets on 22-inch belts. The elevating capacity is 2,000,000 bushels a day. Each elevator has the usual reversing belt conveyor in the cupola, for distributing grain longitudinally of the house, into a total of 370 bins in the two elevators.

The belt conveyor system connecting the two elevators sends out six shipping galleries, each 560 feet long, along the wharves where



SIDE GALLERY OF NEW ELEVATOR.



TRIPPER DISCHARGE TO DOCK SPOUT.



SINGLE BELT GALLERY AND ROPE TRANSMISSION.

## A RUBBER PLANTATION IN GUATEMALA.

THE large specimen of crude rubber shown at the entrance to the Guatemala pavilion at the Paris Exposition of 1900, and for which a gold medal was awarded, was produced from cultivated trees (*Castilloa elastica*) on the hacienda "El Baul," in Guatemala, on the Pacific slope. This plantation was specially mentioned by Dr. Paul Preuss, in reporting on his expedition to Central and South America, under the auspices of the German colonial committee. It has more recently been referred to at length—because of its size, of the care taken in the extraction of rubber, and of the good quality produced—in the *Journal d'Agriculture Tropicale* (Paris), from which the details that follow have mainly been derived.

The plantation "El Baul," until recently the property of Joachim Asturias, is now in possession of a wholesale mercantile firm of Hamburg, who are extensively interested, like many other German houses, in coffee planting in Guatemala, and its management is in the hands of Fritz König. He, by the way, is a brother-in-law of P. Ossaye, owner of the coffee, vanilla, and rubber plantations "Arenal" and "Seamay," in the same region. Such details are mentioned here as indicating that large and permanent planting interests exist in Guatemala, based upon outside capital, as a result of which much experience has been gained in such matters, which is shared by many persons of repute and success, whose confidence in the practicability of rubber cultivation is entitled to consideration.

According to René Guérin, director of the Central Laboratory of Guatemala, writing in the *Journal d'Agriculture Tropicale*, the plantation "El Baul" comprises about 50,000 rubber trees, of which 30,000 have reached a productive stage, being from 10 to 15 years old. Dr. Preuss, by the way, writing two years earlier, mentioned 20,000 trees between the ages of 15 and 20 years. The soil, very liberally watered, is divided into sandy and black-earth zones, though no difference has been observed either in the growth or the productiveness of the trees planted in the two zones. The vegetation is continuous, but at the beginning of the dry season—March and April, when the seeds ripen—the leaves turn slightly yellow and fall.

The trees growing in the plains furnish at all seasons a *latex* of the same quality. The trees on the higher altitudes, and which are for this reason less well watered, yield during the rainy season a larger quantity of *latex* than during the dry season. However, as this *latex* is less rich in caoutchouc, the true yield is the same. The rubber trees which have developed in the plains, exposed to all weathers, begin yielding seed from the third year. Those growing in the woods develop much slower, and at that age have not reached a height above 3 meters. But as soon as these have attained the height of the surrounding trees, and receive the sun's rays direct, their development proceeds rapidly and they reach large dimensions and possess exceptional vigor.

In extracting the *latex*, incisions are made in the bark horizontally, at a distance of  $1\frac{1}{4}$  inch apart, so as to not girdle the tree completely. The *latex* coagulates spontaneously on exposure to the air, and at the end of two or three days the rubber can be gathered from the tree in bands, which, after being washed, may be rolled together into balls. Each tree yields about 125 grams of rubber (from incisions in the trunk alone, and without the branches), and as the cuts will heal

within three months, it is possible to make four extractions each year, giving a total yield of 500 grams [ $=1\frac{1}{2}$  pound.] The annual yield of 1000 grams [ $=2\frac{1}{2}$  pounds] mentioned in Dr. Preuss's report, resulted from making incisions in the branches as well as the trunks, but this involves an undesirable amount of labor.

Much thought has been given on the plantation "El Baul" to the choice of a tool for incising the rubber trees, with a view to affording a suitable outlet for the *latex*, without cutting into the wood, which contains no *latex*, and the wounding of which tends to decay. Dr. Preuss found in use in Guatemala for this purpose a sort of transformed saber, a sketch of which appears in the first of the two cuts herewith. Señor As-



turias has had made to order, in the United States, the tool illustrated in the second cut, which is regarded as superior to the old model. The latter comprises a blade of tempered steel—square at the end, about 3 inches long, and at the top about  $1\frac{1}{2}$  inches wide—mounted in a hard wood handle  $3\frac{1}{2}$  inches long. The steel blade diminishes in thickness from the handle, until at the other end it does not exceed the thickness of a playing card. The left angle of the blade is turned over so as to form a rounded gutter, about finger wide, and at 45 degrees to the axis of the tool. The left side of the blade is notched right at the gutter, so that the lower end of the gutter projects at that side. The parts that do the cutting are the two sides of the turned over angle.

M. Guérin states that Señor Asturias intends trying a new process of extraction, by the employing a vacuum, in the hope of accelerating the flow of *latex*, and adds: "It would be desirable if other cultivators, intelligent and progressive like M. Asturias, would display the same activity in the improvement of rubber cultivation and the rubber product." In too many cases, however, the collection of rubber is left to the natives, who injure the trees unnecessarily, besides producing a poor quality of rubber by the use of soap or vegetable compounds, whereas by the spontaneous coagulation of the *latex*, after the complete elimination of the *serum*, an article of superior quality may be derived from the same trees.

It was found by Señor Asturias that trees on his plantation which presented precisely the same appearance, yet yielded different qualities of rubber. M. Guérin forwarded specimens to the museum of natural history at Paris, where Jules Poisson, of the museum staff, has discovered differences in the fructiferous receptacles of the seeds, and is further engaged in endeavoring to discover whether different species exist. While some of the trees yield caoutchouc of a superior quality, the product of others remains after coagulation sticky, glue like, and with little elasticity. There is also a perceptible difference in the color of the *latex*, that from both trees being white, but in one case with a tinge of yellow and the other with a grayish tinge.

The question of differences in the product of the *Castilloa elastica* is by no means new, but generally the trees not yielding the true rubber have been supposed to bear outward marks by means of which they could be avoided by persons having any experience in hunting rubber. By the way, in connection with the subject, it is interesting to quote from Dr.

Preuss: "One has repeatedly asserted to me that there were, on the other hand, places where *Castilloas* exist that are rich in caoutchouc, and yet whose latex flows along the trunk, so as to be collected in liquid state in vessels, but I have never been able myself to prove the fact." Which would indicate an interesting difference between the trees on "El Baúl," the *latex* of which, as above stated, coagulates on the trunks, and those in Mexico, for example, whose *latex* flows more freely and requires to be coagulated by other means.

#### TABASCO COMMERCIAL CO.

[Plantation "El Zapote," state of Tabasco, Mexico. Office: No. 49 Pearl street, Hartford, Connecticut.]

THE company own 14,000 acres of land. Within eighteen months they have shipped over \$20,000 worth of mahogany to the United States. They purpose planting rubber and cacao on a portion of their property, expecting this year to set out 50,000 rubber trees and to make a nursery of 350,000 plants. The capital is \$150,000, taken principally by thirty New England business men. Officers: Hon. Daniel N. Morgan, late treasurer of the United States, president; H. C. Williamson, superintendent of the Danvers Arms Co., vice president; Rev. Charles A. Piddock, treasurer; and Corey F. Wood, secretary. G. H. Clemow is manager in Mexico.

#### HARTFORD SUGAR AND RUBBER CO. OF MEXICO.

[Plantation in the state of Tabasco, Mexico. Office: No. 49 Pearl street, Hartford, Connecticut.]

INCORPORATED April 22, under the laws of Maine; capital, \$600,000. Incorporators: R. P. Chapman and Corey F. Wood, the latter being secretary of the Tabasco Commercial Co., mentioned in this paper, and whose plantation the new company's property adjoins. The efforts of the company will be devoted at present to planting sugar cane, which promises earlier returns than rubber, and a \$100,000 sugar mill will be erected. Enough sugar will be cultivated to give employment to such a mill, and it is proposed to plant the remainder of the tract of 2000 acres in rubber. The management is practically the same as that of the Tabasco Commercial Co.

#### THE MERIDEN RUBBER PLANTING CORPORATION.

[Plantation "El Meriden," Tula, state of Vera Cruz, Mexico. Office: Meriden, Connecticut.]

J. HERBERT FOSTER, manager, reports from Tula to his company that he has closed the option that he held on the Buffum property, near Tula, and made the first payment on the purchase price. He has removed with his family to Tula and begun work on the plantation, on which rubber planting had already been begun, having the assistance in the way of advice of the former owner of the property.

#### A "TEACHERS' PLANTING COMPANY."

ARTICLES of incorporation were filed April 27, under the laws of New York, for the New York Teachers' Plantation Co., to plant rubber in Mexico. The capital mentioned is \$150,000, and the first directors named are Magnus Gross, George H. Chatfield, and W. L. Ettinger. It appears that the first two named are teachers in New York city, and the third a physician. A preliminary pamphlet on the objects of this company has been issued from the office of Fred C. Leubuscher, a lawyer, No. 99 Nassau street, New York. The idea is to have 750 shares, of \$100 each, subscribed by teachers on monthly payments of \$2 per share, which shall be preferred stock. The remainder of the capital—750 shares of common stock—is to be devoted to the purchase of land and the payment of salaries for five years, promoters' fees, etc. The owners of the preferred shares will have a representation of four out of the five directors of the company, three of whom shall be teachers. The idea is emphasized throughout that it is to be a teachers' company.

It nowhere appears that any one is interested who has had experience in rubber or other tropical planting, except that mention is made of the manager of an important planting enterprise in Mexico who has promised to give some supervision to the development work on a tract of 1000 acres to be purchased on the isthmus of Tehautepec, near the Coatzacoalcas river. So far as the statements in regard to rubber in Mr. Leubuscher's pamphlet are concerned, they are neither very informing nor so misleading as some others that have appeared lately. It is doubtful, however, whether rubber trees ten years of age will "produce anywhere from three to five pounds." It is also too good to be true to learn that "The present profit of from thirty to sixty cents per pound [on cultivating rubber] might easily be doubled in a few years."

The not unusual mistake is made of considering Mexican rubber as worth less than Pará rubber only on account of being less clean, and the pamphlet states that "With Pará rubber worth \$1 per pound, clean Mexican rubber is worth from 65 to 90 cents," and it is added that the cost of putting rubber in market is only 10 cents. There can be no objection to the printing of any statement regarding rubber planting profits so long as their distribution is confined to persons who can readily afford to lose their investments in case these estimates should prove unfounded. But it is to be hoped that the teachers of New York city, none of whom, presumably, have any money to waste, will not invest in the enterprise here outlined without first seeking advice from persons competent to criticise new financial schemes. It may further be suggested that a rubber plantation should be founded upon a better basis than monthly subscriptions of \$2 per head from persons whose income is neither large nor assured.

#### AN ENGLISH RUBBER PLANTATION IN MEXICO.

[Hacienda la Esperanza, Postoffice Tiena Blanca, state of Vera Cruz, Mexico.]

WHILE most of the interest in rubber planting in Mexico has been developed with capital from the United States, and principally under the control of large companies, there are some plantations privately owned by citizens of other countries. One, for instance, is that above mentioned, the property of George Cullen Pearson, of England. In a statement from the manager of this plantation to THE INDIA RUBBER WORLD, under date of May 20, it appears that there are now growing on this property 50,000 rubber trees (*Castilloa elastica*) which were four years old in June; 100,000 trees three years old; and 200,000 trees two years old; besides a large number of plants in nurseries. This plantation, by the way, is one which has been referred to in certain quarters—but not on the authority of the owner—as embracing a large number of rubber trees old enough to be tapped this year.—Mr. Pearson's plantation is located two miles from the "Hacienda de Yale," owned by Alfred Bishop Mason, of Chicago, and president of the Vera Cruz and Pacific Railway Co. Mr. Mason's two nephews, James Trowbridge and R. Willis, are resident managers of this hacienda, on which a considerable amount of rubber planting has been done.

#### RUBBER PLANTING COMPANY PUBLICATIONS.

MEXICAN Gulf Agricultural Co., Kansas City, Missouri. = Coffee and Rubber Culture as an Investment. 62 pp.

The Vera Cruz Development Co., Canton, Ohio. = [Folder, giving outline of plans for rubber planting.]

Isthmus Plantation of Mexico, Milwaukee, Wisconsin. = (1) Information Bulletin, Nos. 8-9, 13. 6 pp. each. (2) Mexico, The Land of Prosperity. 48 pp. (3) Opportunities. 13 pp.

Mutual Rubber Production Co., No. 1, Boston. = (1) Proofs of Profit. (2) A Certain and Safe Income. 26 pp. (3) Form of Contract [with shareholders]. 4 pp.

## THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

*By Our Regular Correspondent.*

**D**ESPITE optimistic reports from some quarters, the general tone has been one of quietness almost verging on depression. This perhaps is only to be expected, as in consonance with the bulk of the trade of the country during the last six months, and it behooves manufacturers therefore to bide with what degree of patience they can command a turn in the tide of affairs. Whether this turn will coincide with the declaration of peace in South Africa is a matter on which one does not care to be prophetic; it certainly seems that such a coincidence has been too readily assumed. One result of the recent quietness in the rubber trade, and one fraught with sinister consequences, too, to those immediately concerned, will probably be seen in the weeding out of some of the smaller firms. There is no doubt that the manufacturing capacity of the British rubber works is in excess of the demand which is existent, and which can be looked forward to with confidence, and the closing of a few concerns would in no wise indicate that an opening exists for the investment of new capital in a similar direction. That is, unless some new use for rubber is found. During the last seven years, since the cycle tire boom, no new use for rubber on anything like a large scale has been found, and although pressure was at first caused by the cycle trade demand, there is no difficulty whatever in meeting the demand at the present time promptly. So far indeed from the use of rubber being on the increase, except in the tire trade, it is notorious that in some directions it is being replaced by other and more lasting material. The engineer does not pin his faith so closely to rubber as he used to do; he finds that other materials answer his purpose as well, if not better, while at the same time costing less money. The use of rubber in electrical insulation is also another instance where a decline has been experienced, and there does not seem any likelihood of its again achieving its quondam prominence in this direction. However, I don't wish to be accused of adopting an unwarranted tone of depression, and certainly reports which have quite recently come to hand from some of our large firms show that since Easter, trade all round has experienced a decided lull, overtime being necessitated where a few months ago extreme dullness prevailed. It is all the more satisfactory to be able to report this as it savors somewhat of the unexpected, though at the same time such reports are not by any means general.

**A NOTICE** has appeared in the technical press that the Board of Trade are advised that precautions should be taken as regards the carriage of lampblack on board ship, although the occurrence of spontaneous ignition is extremely rare. It would seem rather late in the day to draw attention to this possibility of disaster. What is wanted, however, is something in the nature of a careful research to indicate the conditions which are most favorable to spontaneous ignition. I daresay there are few rubber manufacturers who have not had an instance of it in their works. My own experience in the matter goes to show that some blacks are much more liable to this danger than are others. The name lampblack as commonly used is rather misleading, as it is applied to products differing widely in coloring power and density and prepared in quite different manners. Almost as misleading is the term "vegetable black," which in many cases is but a courtesy title. As applied to

an oil product it does not seem particularly appropriate. But space does not permit of enlarging upon the subject of nomenclature, and to keep to points of more practical importance it seems clear to me from cases which have come under my observation that a good deal depends upon the black manufacturer exercising a requisite degree of caution. The filling of orders hurriedly has in the case of a special make of black led to trouble which under normal conditions did not occur. I have not known of any cases of spontaneous ignition in connection with very light carbon blacks, and although I don't pretend that I am entitled to generalize from my own observation alone, I don't think that I am out of order in recommending the use of the lightest carbon blacks in place of heavier blacks where immunity from fire is an especially important consideration. Some years ago a good deal of heavy black was sold to rubber works under this name, but it finds very little favor now-a-days, manufacturers having awakened to the fact that the purchase of whiting or silica admixed with lamp black is by no means a truly economical act. Heavy black of this sort must not, of course, be confounded with genuine heavy black, which may be all carbon, though prepared in a dense form. Comparatively little black is used in the mechanical trade, the waterproofer and especially the rubber shoe manufacturer being the principal customers, freedom from resinous or fatty matters being the chief desideratum.

We are still expectantly awaiting Dr. Weber's book on rubber analysis, which some time ago was stated to be in the press.

ANALYTICAL  
NOTES.

Other chemists have of late been prominent in contributing to this branch of our chemical literature, and we may be said now to be in a pretty good position as regards methods. The weak part of the business, however, seems to lie in the tediousness of so much of the necessary work and the number of separate determinations which are necessary in the case of anything like a complete analysis of a rubber mixture. The rubber works chemist cannot always afford the time thus requisitioned, while the outside chemist finds that it is difficult, if not impossible, to get adequate remuneration for the number of hours he has perforce to work. From one cause and another there has been a reduction generally of late years, in the fees paid for analytical work, and so, although there has been no falling off in the publication of detailed analytical methods, there seems a strong likelihood that many such will find very little employment. We are now told that a correct rubber analysis should include an elementary analysis by combustion for the carbon and hydrogen, and this, with the various precautions against error which are necessitated, will certainly not tend to lighten the analyst's burden. This combustion, which is recommended by Heintz, has been criticised by Frank and Marckwald, who in the course of their observations remark that it is extremely difficult to remove the alcoholic potash used in the extraction of substitutes. The writer can testify to this point, which does not seem to have been sufficiently recognized. Some time ago corroboration on this point was obtained by the writer in a communication from Mr. Van der Linde of the Gutta Percha and Rubber Manufacturing Co. of Toronto, who has devoted considerable time to matters connected with rubber analysis. To refer to another point, it is somewhat unfortunate that analysis fails us in cases where there is an admixture of bodies, which, although

STATE  
OF TRADE.LAMP-  
BLACK.

of different names and physical properties, yet have the same chemical composition. Take for instance, French chalk and asbestos powder; these may both occur in the same mixing, but the analyst cannot be precise upon the point, important though it be, in the case of steam packing. If to the above magnesium silicates, carbonate of magnesia is also added, the difficulty with which the analyst is confronted is augmented, and he must be excused if in his report he uses terms of considerable latitude.

SOMEWHAT conflicting accounts continue to be received as to the degree of favor which this ball has achieved. Certainly in its later improved form, known as the "bramble" pattern, it is thought much more of than as at first introduced, and just at present the supply cannot cope with the demand, even at the price of 2 shillings 6 pence each. The new form having a thicker cover, is found not so liable to split under a severe stroke, and this is considered a great advance.

A GOOD testimony to the success which various American rubber packings have attained over here is seen in the desire which is evinced by many of our firms to make similar products. Not that they are inclined to bow down before the American goods as something necessarily inferior to what they have been accustomed to make themselves. The attempts to work on American lines have been necessitated rather by repeated applications from their customers, and they have perforce found it necessary to indulge in that imitation which we are told is the best form of flattery.

SOME difficulty was at first experienced in making this sort of hose of the high quality which is demanded by such buyers as the British admiralty; the difficulty lying in applying the seamless rubber lining without destroying or at any rate injuring the rubber in the process if the rubber was of first quality. The idea that only common quality rubber could be used for the purpose has however been shown to be fallacious, and some of our prominent firms are now turning out the hose in complete concordance with the somewhat stringent regulations as to quality of rubber which are embodied in the admiralty specifications.

IN this brief mention it is not proposed to give any details of the business carried on at the two rubber works which the country possesses. The chief interest of Holland to our own manufacturers lies in the fact that it is the only country in Europe where there are no patent laws. It seems rather strange that Holland should occupy this anomalous position, but though I have recently been sojourning in the land, this subject was not one of those which came up for discussion, and I am unable to give any reasons as to the why and wherefore. I know that certain transactions in the tire business have in recent years taken place between English and Dutch firms, and which were of a nature not altogether palatable to the Dunlop company.

THE manufacture of this rubber in Great Britain is largely in the hands of the Dental Manufacturing Co., Limited, formerly Claudius Ash & Sons, a good many practitioners being interested as small shareholders. This firm has a small rubber works in the east of London. Another firm making rather a specialty of this class of work is the Scotland Vulcanite Co., Limited, of View Forth Works, Edinburgh, though I am not familiar with any of their products. With regard to various other rubber firms who have dabbled in the business from time to time, it appears that the chief difficulty experienced has been to turn out goods which will keep

their color during vulcanization. The effect of the necessarily large amount of sulphur used is to turn the bright red of the vermilion to a dirty brown, a result not at all desired by the man of the forceps. It has been suggested that some modification of ordinary flowers of sulphur might solve the difficulty. I don't know whether any such sulphur exists as a trade secret, but am inclined to be sceptical on the point.

THE manufacture of these plasters, or such of them as are based on rubber, is carried on by some of our rubber firms.

THE goods as a rule are ordered by manufacturing pharmacists, who give close instructions, and as a rule, send the correct proportions of gums and drugs which are to be mixed with the rubber, these bodies, or rather their constitution, not being revealed to the rubber manufacturer. The business is not much run after as it is somewhat difficult and by no means highly remunerative. At the Chemists' and Druggists' Exhibition held in June in Manchester, under the auspices of *The British and Colonial Druggist*, the old established firm of A. de St. Dalmas & Co. (Leicester) had a large and varied assortment of rubber adhesive plasters and bandages, Gutta-percha tissue, etc.

THE North British Rubber Co., Limited, have been making extensive alterations in their works, a good deal of rebuilding having been necessitated.—The Tubeless Pneumatic Tyre and Capon Heaton, Limited, are still being carried on under the surveillance of a receiver, though it is now almost entirely in the hands of Mr. Palmer, the chairman of the company, who holds nearly all the debentures.—The Rowley puncture locator, brought out some time ago by Thomas Rowley, of Manchester, continues, from what I hear, to gain in popular favor. It is claimed for this fluid, not only that it is a ready means of detecting a puncture, but that it also heals it, if a small one.—The Clayton Engineering and Electrical Construction Co., Limited, of Newton, near Hyde, have recently gone into liquidation. This firm, on whose board the Byrnes, of Birmingham, were represented, has been largely engaged in the manufacture of rubber machinery during the few years of its existence.—On June 6 a motion for the winding up of the Hyde Imperial Rubber Co. was brought at the Stockport county court on the initiative of Mr. Kramrich, a large creditor. The proceedings were lengthy and animated, the matter finally being adjourned for a week.—Dr. C. O. Weber is about to start for Central America, in order to give expert advice to a rubber planting company as to preparing the rubber for sale in a pure condition, so as to reduce largely, if not to annihilate the customary washing expenses in the rubber works. His visit will only be of short duration.—An advertisement recently appeared in a London paper for a man conversant with the details of the rubber manufacture, to go out to South Africa. This rather looks as if the erection of a rubber works was in contemplation. I have heard the opinion expressed that rubber factories in Africa should pay, owing to the contiguity of the raw material, but this advantage, if it is an advantage, which is by no means clear, may easily be counterbalanced by difficulties in the way of getting of other materials incidental to the manufacture.

UGANDA.—In the instructions to Lieutenant Colonel J. H. Sadler, on appointment as British commissioner and consul general in the Uganda protectorate, in East Africa, stress is laid upon the importance of developing the resources of that region, India-rubber being mentioned specially. The reports of the former British commissioner in Uganda, Sir Harry Johnston, have made clear the existence of rubber (*Landolphia* species) there, to an important extent.

HASKELL  
GOLF BALL.

AMERICAN  
STEAM  
PACKINGS.

RUBBER  
LINED  
HOSE.

HOLLAND  
AND THE  
RUBBER TRADE.

DENTAL  
RUBBER.

MEDICAL  
PLASTERS.

SHORT  
MENTION.

## SURFACE ORNAMENTATION OF RUBBER GOODS.

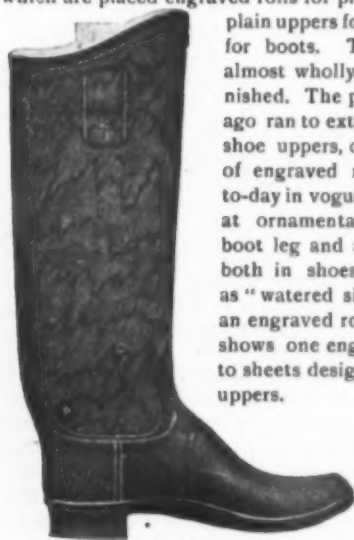
THE different ways in which India-rubber goods may be ornamented affords a very interesting study, besides which they often have proved exceedingly valuable.

It is not a far cry to the time when the plain black gossamer suddenly became much more attractive through the invention of the India stripe. Of course, when that was once accomplished, a great many surface patterns were produced, some of them so ornate that they found no wearers; they were useful only in showing what could be done along such lines. In single texture mackintoshes beautiful lining effects have been attained by running colored silk threads on the surface of the rubber, which is but one of many styles of surface ornamentation.

The rubber clothing business, however, knows very little of this art as compared with such lines as boots and shoes, druggists' sundries, and carriage cloth and imitation leather lines. There are three ways in which this work is done, by using engraved rolls, flexible impression sheets, and dies. These impressions, known by a variety of terms, such as embossing, printing, etc., are all done on unvulcanized rubber in sheet form. For heavy goods, such as carriage drills, the rubber is first calendered to the desired thickness, and upon the fabric which is to be its permanent backing, and afterward varnished and hung in festoons in a dry heater for curing. For lighter goods, like shoe uppers, the calendering and embossing are done by the same roll at one and the same time.

Where the flexible impression sheet is used, which is chiefly in the druggists' sundries line, the sheet of rubber is calendered upon a sheet of fabric which has raised figures which are transferred to the lower side of the sheet. The rubber is then stripped off, made up into the desired form, and cured in a bed of French talc to hold it until set by the cure. Metal plates at best were but a make shift, and were often of lead, from which many rubber duplicates were taken vulcanized, and then used as flexible impression sheets on unvulcanized stock, the printing being done in a cold press.

In rubber footwear special calenders are constructed, in which are placed engraved rolls for producing soling, fancy or plain uppers for shoes, and pebbled legs for boots. This work is of course almost wholly black, and highly varnished. The public taste some years ago ran to extreme ornamentation of shoe uppers, calling for a large stock of engraved rolls. Plain effects are to-day in vogue, the only real attempts at ornamentation being the pebbled boot leg and a very pretty effect used both in shoes and boot legs known as "watered silk." The illustration of an engraved roll on the opposite page shows one engraved to give this effect to sheets destined to be cut into shoe uppers.



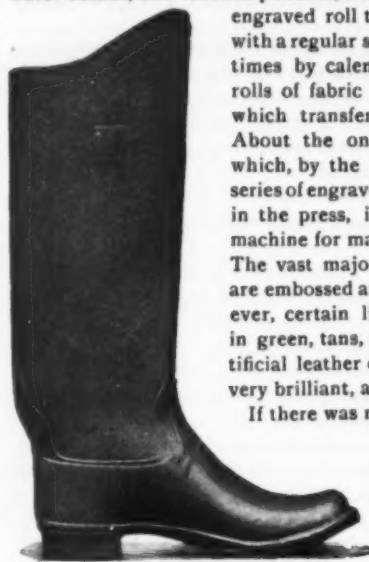
WATERED SILK BOOT LEG.

In carriage cloth and imitation leather for upholstery work, another type of calender is used, having steel engraved rolls

running against specially prepared paper rolls. In druggists' sundries, surface impressions for goods like fountain syringes, water bottles, and tobacco pouches, are sometimes made by an

engraved roll that is run in connection with a regular sheet calender and sometimes by calendering the stock upon rolls of fabric having a raised surface which transfers itself to the rubber. About the only survival of the die, which, by the way, at one time was a series of engraved metal plates and used in the press, is the die used in the machine for making corrugated tubing. The vast majority of the goods that are embossed are black, there are, however, certain lines that are produced in green, tans, reds, and white. In artificial leather of course the colors are very brilliant, and of infinite variety.

If there was need of such work, there is almost no end to the variety of patterns that could be secured either by the use of the engraved rolls or by the flexible impression sheet.



PEBBLE LEG BOOT.

The few illustrations shown herewith will give a very good idea of some in actual use to-day.



OLD STYLE ENGRAVED UPPER.



IMITATION WATERED SILK TOP.



RUBBER SOLING.

To produce lining effects, fabrics may be coated in the usual manner, and then given a coat of tinted rubber solution or dusted with tinted farina, dyed bone dust, arrowroot, aluminum dust, or other similar material, and then covered with a transparent coating of rubber and vulcanized. Or two tints of powder, one under and the other over the transparent coating, give a shot or luminous effect. For printing patterns upon rubber the surface is coated with shellac, powdered glass, tin, or asbestos, etc., and a transparent coating put upon the outside before the cure. Mechanical devices are also used in connection with the above, wavy stripes being formed by giving a transverse motion to the feed roll, and a watered silk effect by a roll with straight ribs followed by one with wavy lines, or by two straight ribbed rolls between which the cloth is given a reciprocating motion as it passes through.



LEATHER PEBBLE.



ALLIGATOR.



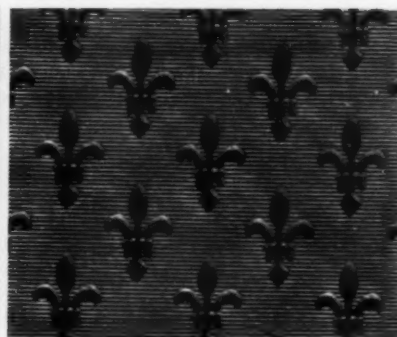
LEATHER GRAIN.



DICE PATTERN.



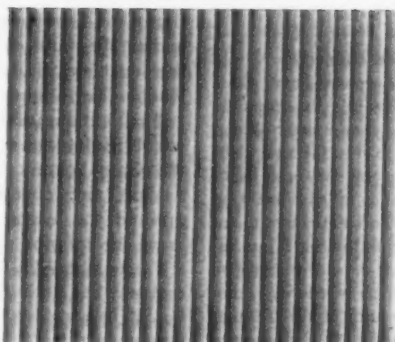
FLORAL PATTERN.



FLEUR-DE-LIS.



WREATH EMBOSSING.



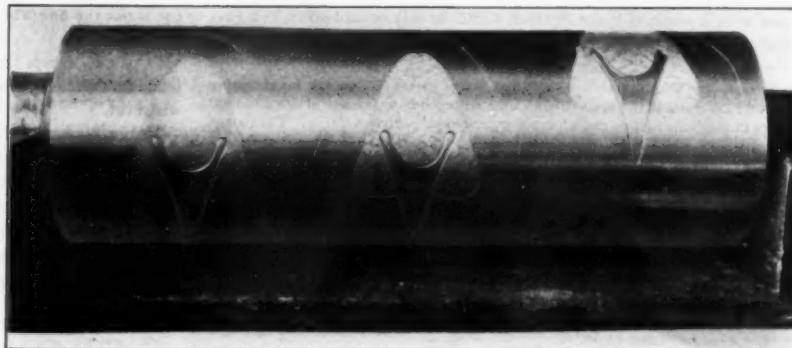
RIBBED OR CORRUGATED.



WATERED SILK EFFECT.



PEN SCROLL.



ENGRAVED ROLL PRODUCING WATERED SILK EFFECT.

# SURFACE ORNAMENTATION OF RUBBER GOODS.

ENGRAVED ROLL, WATERED SILK EFFECT, AND TYPES OF SURFACES PRODUCED BY ENGRAVED ROLL CALENDERS.

## A DECISION IN FAVOR OF THE GRANT TIRE PATENT.

**A**NOTHER judicial decision has been rendered, bearing upon the Grant patent for solid rubber wheel tires, this time in *re* The Consolidated Rubber Tire Co., *et al. v.* The Finley Rubber Tire Co., *et al.* The case was tried in the United States circuit court for the northern district of Georgia, at Atlanta, the decision being handed down by Judge Newman, on June 2. Before final hearing, The Goodyear Tire and Rubber Co., alleging that they were the real party at interest, rather than the Finley company, were made party defendant.

The original bill sought to enjoin the infringement by the defendants of the Grant patent. The contention for defendants was that the invention claimed by Grant is a mere combination, or aggregation, of old elements, each of which was well known to the prior art before the date of the Grant patent. Defendants claim that combining these various elements required only ordinary mechanical skill, and involved no discovery and no new principles.

The court reviews the former decisions, bearing upon the same patent, by Judge Thomas, at Brooklyn, and by Judge Wing, at Toledo, and concurs in their finding that the Grant patent does disclose patentable invention, though the several parts which constitute the essential features of the invention were each used in different combinations in previous inventions. In support of this position the court refers to numerous prior decisions in patent cases. One such decision, in a case wherein it was argued that a certain combination of devices did not constitute invention, runs, in part:

This argument would be sound if the combination claimed by W. was an obvious one for obtaining the advantages proposed—one which would occur to any mechanic skilled in the art. But it is plain from the evidence, and from the very fact that it was not sooner adopted and used, that it did not for years occur in this light to even the most skillful person. It may have been under their very eyes, they may be almost said to have stumbled over it; but they certainly failed to see it, to estimate its value, and to bring it into notice. Who was the first to see it, to understand its value, to give it shape and form, to bring it into notice, and urge its adoption, is a question to which we will shortly give our attention. At this point we are constrained to say that we cannot yield our assent to the argument, that the combination of the different parts or elements for attaining the object in view was so obvious as to merit no title to invention. Now that it has succeeded it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combina-

tion and arrangement of known elements produce a new and beneficial result, never attained before, it is evidence of invention.

But, says the decision, whether its conclusion is correct or not, the defendant Finley is estopped for setting up the invalidity of the Grant patent. At one time Finley entered into a contract with the Rubber Tire Wheel Co., then owners of the Grant patent, for the exclusive sale of tires made under that patent, in certain territory, in said contract acknowledging the validity of the Grant patent and agreeing not to sell any other tires than those covered by this patent during the life of the patent—unless the contract should sooner terminate by the fault of Rubber Tire Wheel Co., or its successors. This contract was assignable by Finley with the consent of the other party to the contract, and in time Finley disposed of his interest to what is now the Munford Rubber Tire Co., of Atlanta. The decision says:

It would work little profit to Munford to have obtained this right [to sell tires] if the patent by virtue of which the Rubber Tire Wheel Co. was authorized to make such an exclusive grant should be invalid. Finley having recently received a valuable consideration for the exclusive right to sell the Grant patent in certain states, certainly he cannot be heard in a court of equity when he seeks to invalidate this patent as against his assignee.

It had been urged, by the way, in behalf of Finley, that in view of certain circumstances the contract referred to had become void, but the court held that these circumstances, being connected solely with the merger of the Rubber Tire Wheel Co. in the Consolidated Rubber Tire Co.—which was clearly within the right of the former company—in no way affected the legal status of the contract entered into originally by the Rubber Tire Wheel Co. and Finley.

The next question presented in the case was whether the tire which Finley was marketing when this bill was filed infringes the Grant patent. The tire in question is the Goodyear "wing" tire, covered by United States patent No. 623,703, granted to Joseph A. Burroughs, April 25, 1899. On this point the decision reads:

I agree thoroughly with Judge Wing in what he says [decision rendered in *re* The Rubber Tire Wheel Co. *v.* The Goodyear Tire and Rubber Co., at Toledo, Ohio, November 23, 1901], as follows: "The infringement of the defendants is clear. While it is urged by the defense in their answer that they are operating under a patent issued to Burroughs, the proof shows that the device shown and described in the Burroughs patent is not the one which the defendants are using, but they have been and are using the exact device shown and described in the complainant's patent, except that on the rubber part of the tire used by the defendants there is a thin excrescence of rubber which performs no function whatever."

Judge Newman states, in conclusion, that after having prepared his decision, but before it was filed, he received and examined the decision in the United States circuit court of appeals at Cincinnati, declaring the Grant patent "void for want of patentable novelty." He held, however, that the court over which he presided should "exercise and express its independent judgment," instead of being controlled by a decision in another circuit.

It will be remembered that in November last, in a suit for infringement of the Grant patent in France, a decision was rendered similar to that reported above, after a hearing of the same testimony as to want of novelty in the patent.

**NOTE.**—This litigation relates to United States patent No. 554,675, for confining a solid rubber tire in the steel channel on a wheel rim by means of longitudinal wires through the rubber, the wires being jointed by electric welding. The patent was issued to Arthur W. Grant and disposed of by him to The Rubber Tire Wheel Co., merged later in The Consolidated Rubber Tire Co. The first suit for infringement brought to trial was decided at Brooklyn, New York, in favor of the plaintiffs. The second was decided at Toledo, Ohio, in a court of similar standing, also in favor of the plaintiffs. This decision, however, was reserved in May last, at Cincinnati, by a higher court, in the same jurisdiction, declaring the patent void for want of patentable novelty. The decision reported on this page at Atlanta, rendered also in a court of first resort, is favorable to the plaintiffs, the court holding that it is not necessarily controlled by the finding of a higher court outside of that circuit, or jurisdiction. It is now announced by The Consolidated Rubber Tire Co. that they will appeal from the Cincinnati decision to the United States supreme court.



## THE USE OF RUBBER IN PAINTING MACHINES.

**D**URING the construction of the World's Fair buildings at Chicago, nine years ago, a certain inventive genius who stated publicly that he proposed to paint the buildings by machinery was mercilessly ridiculed. The "knowing ones," however, saw buildings which it was estimated would take four months to paint by hand, thoroughly and durably painted in one week by machinery. The

paint was sprayed on the building through India-rubber hose from tanks, from which it was expelled by means of compressed air. An illustration of this process, by the way, appeared in THE INDIA RUBBER WORLD of July 15, 1893. Since that time, thousands of painting machines have come into use, involving many advantages, not the least of which, of course, is economy, and the subject is referred to here for the reason that without the help of the rubber manufacturer in supplying the flexible hose needed the new method of painting never would have been possible.

**CYCLO PAINTING MACHINE.**  
Complete in itself, including paint receptacle.—The Muralo Co., New Brighton, Staten Island, N. Y.

The need of paint as a preservative of both woodwork and ironwork is, of course, universally conceded. In these days of large structures, not only is the cost of paint very large, but the expense of scaffolding, brushes, labor, and so on, adds enormously to the expense of painting

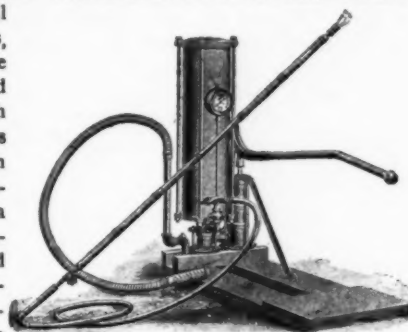
over a great structure. These machines are being used for the painting of factories, breweries, distilleries, hospitals, stables, greenhouses, packing houses, power plants, steamships, railway stations, freight cars, tobacco warehouses, plantation buildings, and sheds and houses in general. The catalogues of the firms manufacturing painting machines contain the names of hundreds of customers, including such concerns as the Standard Oil Co., the New York Central Railroad Co., the United States Sugar Refining Co., the Singer Manufacturing Co., the leading iron manufacturers, milling companies, brewing companies,

and so on, the inference being that if such concerns find it advisable to use these devices, their competitors must also find themselves obliged to use them.

As may be supposed, painting by machinery requires specially prepared paints. The machines are not recommended for use with heavy oil paints—that is, those whose base is white or red lead mixed with heavy linseed oils—for the reason that these ingredients, being of a sticky, gummy nature, clog up and prevent satisfactory spray working. It is known that the thinner the coating materials are applied, provided that they thoroughly cover the surface, the neater, more lasting, and satisfactory the work will be. The thicker the paint is put on, the more liable it is to crack and fall away. It is found by experience that paint can be more evenly distributed by means of machinery than in any other way, besides which it can thus be applied in many places which cannot be conveniently reached



HOOK'S "BEST" PNEUMATIC COATING MACHINE.  
F. E. Hook, Hudson, Michigan.



BEAN PNEUMATIC COATING MACHINE.

Showing suction hose with strainer; discharge hose; and bamboo rod for ceiling work.—The Bean-Chamberlain Manufacturing Co., Hudson, Michigan.



STAR WHITEWASH AND PAINTING MACHINE.

With attachment for use in a plant having a compressed air system.—The Star Brass Works, Chicago, Illinois.

in painting with brushes by hand. One of these machines is stated to be capable of doing the work of from eight to twenty-five men in a given length of time.

In the operation of the pneumatic coating or painting machines each is supplied with a length of suction hose—usually 5 feet, one inch, wire wound, provided with a strainer—to con-

nect with the paint reservoir, and from 20 to 25 feet of  $\frac{1}{4}$  inch delivery hose. The machine then being charged with air, the operator guides the discharge on the surface to be coated, and the liquid is formed into a filmy, misty spray, which reaches every part of the surface to be covered, including nooks and crevices. Various companies making these machines offer also paints and whitewashes specially prepared for use with them, or formulas for making the same. One of the items of rubber in connection with the painting machine is a plunger ring for the compressed air apparatus, the importance of having which of good quality is strongly emphasized. Usually, these machines have their own compressed air apparatus, but they may be adapted for the use in plants which already have a compressed air system installed.

#### VIEWS OF A MANAOS RUBBER MERCHANT.

**D**URING a recent visit to New York of Mr. N. H. Witt, a leading rubber merchant of Manaus, the rubber center of the upper Amazon, he was asked by THE INDIA RUBBER WORLD for his views on the practicability of companies being organized to work on a large scale in the movement of rubber direct from the producing districts to the consuming markets.

"I do not believe that such a thing can be done as yet," said he. "Not that I profess to know more about the subject than any one can know who has spent several years in the rubber trade on the Amazon, and who has felt an interest in everything that has gone on around him pertaining to rubber. My own business is that of buying and selling rubber along the lines of established custom. But I have seen nothing that would lead me to take an interest personally in such an undertaking as you suggest. And I have seen not a few failures.

"There was, for instance, the Comptoir Colonial Français, which lately went into bankruptcy in Paris, after losing about \$2,000,000 in a little more than a year's trading in rubber on the Amazon. These companies, starting without any knowledge of conditions in the rubber countries, send out managers who feel self confident and who are not disposed to learn anything from persons who have been longer on the ground and have gained, perhaps by painful and costly experience, some knowledge of the facts which have to be dealt with.

"The difficulty of the labor problem is an old story which continues to be repeated. In the Amazon valley all the labor must be imported, together with provisions. Whether the trouble is less in this regard in Bolivia, where there are Indians in the rubber forests who can be induced to work, I do not know. But even there there are no provisions on the ground, and on the Beni I understand that the proprietors of rubber camps are obliged to import a good quantity of food products. If it is suggested that farm laborers be colonized to cultivate crops for food supplies, I can only ask who is going to do the colonizing, and where are the colonists to come from? The native population will prefer to lead the lives that they have been accustomed to and will be next to impossible to control by foreigners who do not understand their ways. If they are able to earn as much at cultivating beans and farina as they can at cutting rubber, the crops which they grow will not be cheaper than imported food. There are no European peoples who can stand working in the climate of the Amazon valley. Something might be done with coolies, but it is a difficult matter to arrange with the government of British India for their introduction into South America. There has been talk of importing Chinese, but they would likely all turn traders and desert the rubber camps.

"I am convinced, therefore, that for a good while to come the safest way to deal in rubber is through the establishment of trading houses at the principal centers, as at present, and buying such rubber as may reach the market, from whatever source."

In answer to a question as to whether the existing rubber fields on the Amazon were showing indications of becoming exhausted, Mr. Witt said:

"All the fields which yield rubber other than Caucho still seem to produce the usual output. It is probable, however, that in some districts on the lower Amazon the trees have ceased to yield, and the fact that more rubber has been shipped this season from the state of Pará than last season may be due to the fact that the rubber workers have gone into new territory. In some cases, the men may have worked harder, as we call it, forced by the low rubber prices ruling now. The increasing total production of the Amazon valley is due, of course, to the general widening of the district gone over in the search for rubber.

"One thing which indicates that the trees in the districts which have longest been worked are becoming less productive, is a fact that the rate of shrinkage in the Islands rubber received at Pará gradually becomes greater. I remember that in 1885, a shrinkage of 6 per cent. was expected in Islands rubber, and the rate has gradually increased until now a shrinkage of 14 per cent., or even more, is not unusual. And meanwhile there has been no important improvement in means of transportation between the Islands districts and Pará. Evidently, there is a smaller percentage of solid rubber in the milk than when the trees were fresher, and with the same amount of smoking as formerly more moisture is retained in the rubber to be lost during shipment. In other words, while the trees apparently yield as much milk as formerly, the real production of rubber per tree is less."

Mr. Witt spoke of the rapid exhaustion of Caucho in all the districts where the Peruvians went in search of it, and it was his impression that the trade of Iquitos, largely based upon Caucho, was not, for this reason, showing any increase. There was a possibility, however, that with the total exhaustion of Caucho on the upper Amazon—say within the next ten years—the Peruvians might turn their attention to gathering fine rubber, and thus replace in a measure the Caucho trade.

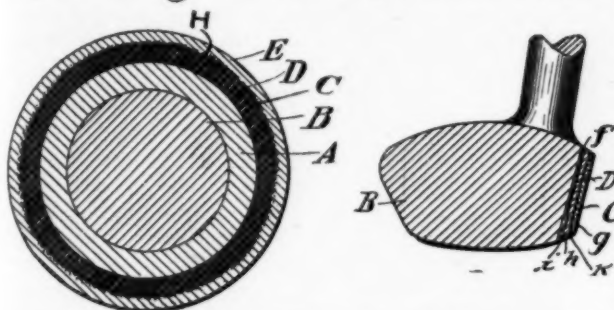
In regard to cable communication between Pará and Manaus, Mr. Witt said that great inconvenience to trade resulted at the latter place from the frequent interruptions. With the constant fluctuations in exchange, there was constant risk in business transactions conducted up the river without a knowledge of conditions at Pará and in rubber markets elsewhere. With adequate cable facilities, he thought that Manaus would become an even more important center of the rubber trade. In such an event, all the rubber from the upper Amazon and its tributaries would naturally find its way to Manaus, even without the aid of such a law as has been put in force for this purpose in the state of Amazonas. It is believed now, however, that the English company owning the cable is making some improvements, and it is possible that such a course will give a much more efficient service.

**SAILOR NICKS**, known as the champion rope slider of the world, has developed a new use for garden hose. His specialty, by the way, is to slide from a captive balloon, 1500 feet above the earth, down a  $1\frac{1}{4}$  inch rope to the ground. In order to do this comfortably, he has a section of garden hose, ten inches long, slit up on one side, which fits snugly over the rope and which he uses as a brake in his long slide to the ground.

## NEW GOODS AND SPECIALTIES IN RUBBER.

## MR. KEMPSTALL'S GOLF BALL PATENTS.

LATE editions of the *United States Patent Office Gazette* report the issue of 22 more patents, with 218 claims, for golf and other balls—in addition to those mentioned in the last issue of *THE INDIA RUBBER WORLD*—all assigned to the Kempshall Manufacturing Co. This makes, up to



June 1, the issue of 77 American patents, containing 874 claims, with more to follow. The English patent office is also beginning to publish applications for patents by the same inventors and assigned to the same company. In addition to the ball patents, Mr. Kempshall has invented a golf club with a celluloid and fabric facing, an illustration of which is herewith shown, and for which, if he is consistent, he and his associate, Mr. Richards, will need to take out some 76 more patents with about 863 claims. Another patent which has been issued to Mr. Kempshall, is for a spinning roll, comprising a core, a layer of soft rubber thereon, covered with a shell of celluloid, having fabric embedded in it, which is wrapped around the rubber compressing it tightly, the celluloid shell being held in place by welding.

## MELCHERS'S SHOWER YOKE.

THIS has been referred to as a perfect portable shower bath appliance. It provides complete regulation of temperature (cold, warm, or hot) and pressure; it showers the whole body at once, forcing a simultaneous reaction—a sanitary and exhilarating



necessity after the tub bath. The yoke is made of fine brass, nickel plated, and the connections are first quality Pará rub-

ber. It is supplied with either single or double faucet connection [Meilink Manufacturing Co., Toledo, Ohio].

## "INTERLOCKING" RUBBER TIRE.

THIS is a new style of solid vehicle tire, mentioned already in *THE INDIA RUBBER WORLD* as having been patented by W. R. Gideon. By reference to the illustration it will be seen that in the tire there is a longitudinal depression in the center, with a corresponding ridge in the steel channel, to which it is snugly fitted. This formation is referred to as causing the rubber to hug the steel ring so securely that, when properly set, it cannot be removed without the aid of tools. For the same reason the tire will not creep. On account of the channel edges being about  $\frac{1}{4}$  inch lower than those supplied with other tires, the "Interlocking" has a larger wearing surface, and thus will wear longer before the bearing comes to the steel rim and makes re-rubbing necessary. This tire is controlled by The Southern Rubber Tire Co. (Knoxville, Tennessee), for whom it is manufactured by The Combination Rubber and Belting Co. (Bloomfield, New Jersey).



## AMERICAN MADE "SOLAR" AUTO-HORNS.

AUTO-HORNS or "squawkers" have already been described in this department, but they were of foreign manufacture. On this page illustrations are presented of two styles of a horn manufactured in the United States, in an effort to produce the equal of any of the imported French horns. These horns are constructed of a special quality of brass, and are handsome in design and finish; they give a penetrating and noisy note; are quick to act and respond; and are provided with a clamp that which will admit attaching wherever desired. A point of special interest in this connection relates to the rubber attachment



DIAMETER OF BELL  
HORN 4 INCHES.

DIAMETER OF BELL  
HORN 5 1/4 INCHES.

of these horns, in relation to which manufacturers advise *THE INDIA RUBBER WORLD*: "During the past year we have spent considerable amounts of money trying to get American rubber

bulbs equally as good as the imported ones. Three different manufacturers in this country have given up the job. We have just within the last 30 days succeeded in getting a bulb of American make, which in our tests answer the purpose, and by the next automobile shows, held in the coming winter, we shall have a large and varied assortment of horns in different sizes for the market." [The Badger Brass Manufacturing Co., Kenosha, Wisconsin.]

#### SOMETHING NEW IN CRUTCH TIPS.

SEVERAL cuts shown on this page illustrate various applications of a new feature in the construction of crutch tips, on

the principle of adding to their durability through the use of a friction plug. This plug is made of cotton duck or fabric, and cut in such a way that the wear always comes on the end of the thread, thus avoiding any possibility of unraveling. The fabric is thoroughly coated or frictioned with rubber, so that it adheres firmly and becomes a part of the tip when molded. As is well known such fabric is more durable as a wearing surface than rubber, and consequently, by the use of this friction plug, the wearing quality of the tip is greatly increased. This idea in crutch tips is covered by patents granted in March last, since which time the friction plug has been adapted to practically all the various styles of rubber crutch tips, and with a marked degree of satisfaction to the user. While the duck is used for friction purposes, the remainder of the tip requires to be made of good quality rubber, in order to get the benefit of the elasticity and prove soft and easy to the wearer. The retail price of crutch tips made with the friction plug is somewhat higher than other tips, but, considering the increased durability, the new style may prove cheaper in the end. Fig. 1 illustrates the solid screw crutch tips with friction plug, which are made in three sizes. Fig. 2 shows the socket friction plug crutch tip, which is made in five sizes, and Fig. 3 a sectional view of the interior construction. Fig. 4 shows the Whittemore style of friction plug crutch tip, made in four sizes. [The Elastic Tip Co., No. 370 Atlantic avenue, Boston, Massachusetts.] ==There have been described of late in this paper, rubber heels, horse shoe pads, and even vehicle tires, involving similar uses of friction fabrics, showing the popularity of such materials for resisting wear.



FIG. 1.



FIG. 2.

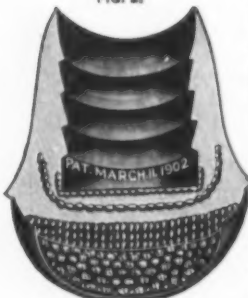


FIG. 3.



FIG. 4.

#### RUBBER HAND ROLLERS.

WHEREVER rubber goods are made up—that is, with different parts either of rubber alone or fabric and rubber—the hand



roller is found to be a necessity. Its use is both to set the surfaces closer together, and, incidentally, to drive out air and

prevent blistering during vulcanization. These rollers are made in various sizes and used by the thousand in the manufacture of air goods, clothing, sundries, mechanical goods, and boots and shoes. One of them, in fact, forms a part of each boot or shoe maker's "kit," and is frequently the private property of the user. Not every machine shop can suit the needs of the workers in this particular. Hence the cut herewith, which shows a roller that is, perhaps, used more than any other. [Hodgson & Pettis Manufacturing Co., New Haven, Connecticut.]

#### THE VIDETO CUSHION HEEL.

THE rubber body of this heel is attached to a leather lift, which renders it unnecessary for the repairer to use cement

or to level the old heel. All that is required is to remove the leather heel of the shoe down to the heel seat, and attach the Videto heel with the required number of nails, shaving the leather edge, which completes the task. This heel is so constructed that it forms an air cushion, which feature tends to prevent slipping. The top piece of leather,  $\frac{1}{8}$  inch thick, enables the rest of the heel to be made of rubber



throughout. There are no cavities in the heel surface to collect and carry dirt. With women's heels is supplied an extra leather lift, which may be used or not as desired, thus filling the requirements of a high or low heel. [Lincoln Rubber Co., Albany building, Boston, Massachusetts.]

#### THE "UNION" HORSESHOE PAD.

A RUBBER horseshoe pad has been constructed with aluminum points, with the purpose that they shall not wear

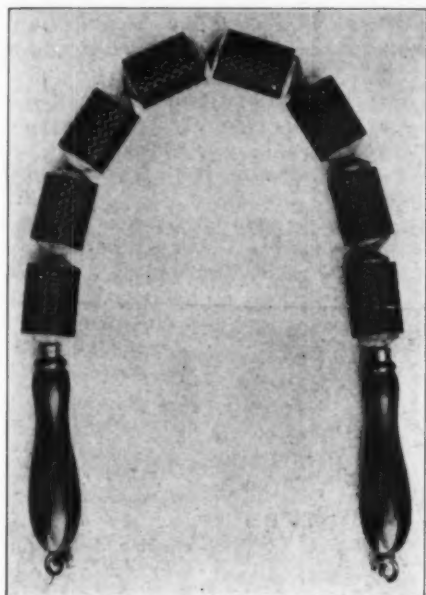
smooth, thus preventing the horse from slipping. The experience with some pads has been that as the corrugation wears off the pad, the horse will slip on asphalt, making it more dangerous for a horse than if he had no pad at all. With the new pads, however, it is stated that as soon as the corrugation commences to wear off there is a new corrugation that constantly takes its



place, thus preventing any slipping. Another recommendation of the new pad is that the rubber compound is especially adapted for durability. The new pads are made in two styles, designated as the "Union Bar" and "Delaware Full" pads, the first of which is illustrated in the accompanying cut. By the use of a special design, these pads can be used for either the front foot or hind foot, so that the blacksmith is not obliged to carry so extensive a stock as otherwise would be necessary [Delaware Rubber Co., No. 244 Market street, Philadelphia, Pennsylvania.]

## BAILEY'S RUBBER MASSAGE ROLLER.

The growing disposition of physicians all over the world to recognize the value of the massage treatment for many ailments



upon which drugs has no effect, has led to the production of many appliances for use in such treatment. One of the latest of these is illustrated in an accompanying engraving. It can be used by any person without assistance and is designed to give all the effects that any *masseur* gives, with addition of the electrical effect caused by the friction of the roller over the body. Besides the illustration of Bailey's patented rubber massage roller, some illustrations are given of the various positions of the body in which this device is applied for the treatment of the various muscles for different purposes. This list might be extended almost indefinitely. This article retails at \$2. [C. J. Bailey & Co., Boston, Massachusetts.]

## GERMAN PRICES OF RUBBER SCRAP.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In your edition of May 1, I noticed a report of an agent for rubber scrap in Boston, who states that rubber goloshes have been sold in Germany, at a price equal to 7 cents per pound c.i.f. I am confident that this agent's principals misinformed him on the price of what the German manufacturers are paying for rubber boots and shoes.

I have a statement from one of the largest manufacturers of reclaimed rubber in Germany, who told me in the early part of April that he was buying goloshes at a price equal to 5 3/4 cents per pound, delivered at his factory, and as there are only three reclaimers of rubber boots and shoes in Europe, outside of Russia, I feel confident that the price which the manufacturers in Germany claim that they are buying for are right.

The American manufacturers of reclaimed rubber, to my mind, make a big mistake in buying through agents and paying for their scrap by letter of credit. Were they to stand out they could certainly have their material shipped to them on a basis of from 75 to 90 per cent., sight draft, attached bill of lading.



The large dealers in Europe do not take into consideration the price of crude rubber, on which the value of scrap is based, and if the reclaimers of America would keep the dealers posted as to the value of crude rubber, it would certainly help to keep the price of rubber scrap down, which is no doubt too high, based on the present value of crude rubber.

The reclaimers should certainly not make any allowance for tare. I think this would be a matter for the Reclaimers Association in America to look into.

T. O. N.

London, May 24, 1902.

## NEW TRADE PUBLICATIONS.

THE BEACON FALLS RUBBER SHOE CO. (Beacon Falls, Connecticut) have issued a catalogue and price list of Fine Rubber Boots and Shoes for 1902, which is conveniently arranged on larger pages than most of the rubber shoe catalogues, and is neatly printed and well illustrated. Several pages are devoted to "Combinations," of which the company make a large variety. [4 1/4" x 8 3/4". 68 pages.]

MASSACHUSETTS CHEMICAL CO. (No. 200 Summer street, Boston, Massachusetts) issue two booklets: (1) "What About Tape?" devoted to the quality and method of manufacture of their "Electric" tape, and (2) "How to Insulate an Armature," devoted to their "Armalac" compound, tape, and field coil duck—preparations especially adapted for electrical repairs.

NEW YORK BELTING AND PACKING CO., LIMITED (New York) issue a new catalogue of Garden Hose, in which they emphasize the fact that the various grades described and illustrated are not new, but have been known to the trade for so many years as to have gained a thoroughly established reputation for quality. [3 1/2" x 5 1/2". 12 pages.]

DAVIDSON RUBBER CO. (Boston, Massachusetts) issue a general catalogue of Druggists', Surgical, and Stationers' Goods, in hard and soft rubber [3 3/4" x 8 3/4". 96 pages] and a separate catalogue of Family Goods in rubber, including the lines of druggists' sundries in most general use. [5" x 6 1/2". 46 pages.] Both catalogues are adequately illustrated. The company have also sent us a number of circulars, each describing one of their specialties.

JAMES BOYD & BROTHER (No. 14 North Fourth street, Philadelphia) issue their Catalogue No. 8 of mechanical rubber goods, which is larger and more complete than their previous editions. The catalogue is devoted more especially to Fire Department Supplies, and on the title page it is stated that the firm are selling agents for The Boston Belting Co. and Eureka Fire Hose Co., in addition to some firms making other fire department supplies than rubber. [5 3/8" x 7 3/4". 128 pages.]

## RUBBER FLUX.

A VERY interesting and cheap substitute for India-rubber has for some time past been quietly introduced in the trade under the above name. It is called a flux, for the reason that it seems to have the faculty of welding together various grades of crude rubber and reclaimed rubber, and also helping them to carry more compound. This Rubber Flux is of dark color, is a neutral body, and not only prevents oxidization, but does away with a bloom in rubber goods to a marked degree. It is said to be preferable to palm oil, because it does not escape during vulcanization. Samples of reclaimed rubber with a small percentage of the Flux mixed with it demonstrate that the elasticity is much increased, that the reclaimed rubber is softer, more pliable, and more capable of taking in compound. Mixed with Pontianak, it keeps the latter from oxidizing.

## NEW RUBBER FACTORY EQUIPMENT.

## THE DE LASKI CIRCULAR LOOM.

THE machine illustrated herewith is the result of many years' practical experience in the building of machinery for circular weaving for fabric covered hose, cables, and the like, and is really a marvel of economic and practical construction. The space occupied by it is a circle 4 feet 7 inches in diameter, the top ring plate being 3 feet 2 inches from the floor. The machine has the following features: Segmental dust-proof covers, automatic tension arrangements controlling each individual thread, and positive gear-driving mechanism, the latter insuring absolute correspondence between the shuttle and warp motions, the same being true of the take-off attachments. The cylindrical rolls between the fabrics that are drawn off are operated by cut gears. Further advantages are that the working parts of the machine are near the floor; the two shuttles hold three pounds of yarn each, and the warp is taken directly from individual spools placed on "A" shaped creels located below the floor. All sizes of tubular fabric, from  $\frac{1}{2}$  inch to  $3\frac{1}{2}$  inches, triple jacket, can be woven by this machine, and it is further adapted to weaving covering for solid cores, electrical cables, air compressor hose, etc. The loom runs from 69 up to 100 revolutions per minute, depending upon the size of the fabric woven. It turns from 500 to 1000 feet of finished fabric every ten hours. The weight of the loom completed is 2,000 pounds. It is manufactured by John Royle & Sons, Paterson, New Jersey.

## A NEW SAFETY STOP FOR RUBBER MILLS.

THE two illustrations herewith relate to a new automatic device for stopping heavy machinery, particularly adapted for use in rubber mills. A safety device of this kind would seem to be something that many mill men have felt the necessity for, and there are few of long experience but can recall numerous instances where, had their mills been equipped with some such arrangement, it would have saved life or limb, or perhaps thousands of dollars at the end of a vexatious damage suit,

to say nothing of the loss from breakage when heroic measures have had to be adopted to save a workman who was caught in the rolls.

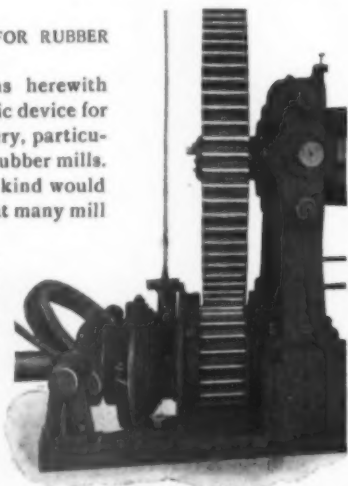
A positive stop motion is not new. It has been used by leading rubber machinery makers for years, but heretofore the device has been of a character not to commend itself to the user for the reason that careless handling of it, or indeed any use of it, almost invariably resulted in some expensive breakage. When a mill is loaded at the point of consuming the greatest

amount of power, is just the time that the necessity for a sudden stop to prevent accident is more likely to occur. Then a sudden strain, the whole 20 H.P. or more, as the case may be, is thrown on to the clutch and shaft running at say 75 revolutions, making a tremendous shock, from which something must give way. A 5-inch shaft has

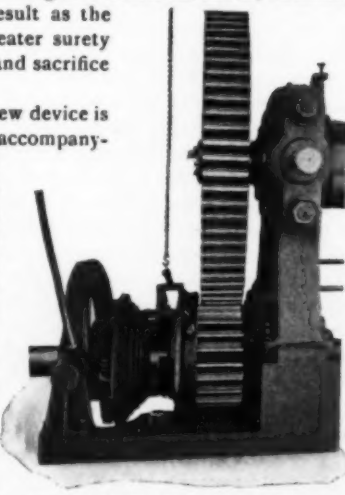
been known to bend enough from just such a shock to completely defeat the purpose of the so-called "safety clutch," permitting the rolls to continue revolving. The danger of some injury to the mill by use of this arrangement is so well understood that few superintendents or master mechanics will have them anyway, and those who do will not permit an operator to meddle with them except in the case of threatened serious accident.

To overcome the objection to the old form of positive stop motion, this new safety stop device was designed, the aim being to accomplish the same thing and avoid the shock, obtaining practically the same result as the friction clutch, with greater surety and at much less cost and sacrifice of space on the shaft.

The character of the new device is so well illustrated in the accompanying cuts that a brief description only will be necessary. It consists of very much the usual form of clutch pinion and clutch, the latter made with a helical shoulder on the face. A steel dog is held in suspension by a latch, to which is attached a light chain carried over the mill, with a handle or pull at the end, located directly over the middle



CLUTCH BEFORE BEING PUT IN OPERATION.



CLUTCH AFTER ITS WORK HAS BEEN ALMOST COMPLETED.

of the rolls, within easy reach of the operator, or in the place of the chain and handle some other plan for operating latch and handle, such as a bar placed across the tops of the roll frames. With a slight pull on the chain, the latch releases the dog, which in turn drops into the opening between the helical shoulders on the clutch and the flange on the pinion, and, forcing them apart, stops the rolls within two or three revolutions of the shaft. As the speed of the shaft is so much greater than the rolls, the latter come to an almost instantaneous stop. This form of clutch can be readily applied to old as well as new mills and adapted to any form of bedplate, and, as a rule, does not require any more room on the shaft than the old style.

The patent for "Automatic Stop for Heavy Machinery" was issued to Frank H. Brewster, April 23, 1901, and assigned to the Birmingham Iron Foundry (Derby, Connecticut). This company, besides single orders for trial, have a contract to equip one of the largest rubber factories in the United States, having about fifty mills, and have also just completed a new plant of about thirty mills, entirely fitted with this safety stop. Another illustration appears in the advertisement of the firm named, elsewhere in this paper.

#### NEW PROCESS FOR MAKING SOLID RUBBER TIRES.

ALBERT T. HOLT, superintendent of The Victor Rubber Co. (Springfield, Ohio), has just been allowed a patent for a process in the manufacture of solid rubber tires, which promises exceedingly well. Described in brief, a press is made, a trifle longer than the tire would be when laid out straight. This press is provided with a series of mold cavities running parallel to each other, the length of the lower platen. Each of these has the shape of a complete tire, which would mean that the widest point lies below the upper surface of the platen, forming a mold open at the ends and having a relatively constricted mouth at the upper surface. It will be seen that it would be difficult to withdraw such tires after vulcanization from a mold shaped in this way. The tires are covered with a sheet of canvas which is interposed between the mold and the upper platen, and the whole vulcanized together. After curing, the upper platen is raised and a slight pull on the canvas compresses the wider portions of the tires, allowing them to be withdrawn from the mold very easily. The tires are then cut apart along the edge of the base of the tires.

#### RECENT RUBBER PATENTS.

##### THE UNITED STATES PATENT RECORD.

ISSUED MAY 6, 1902.

- N<sup>O</sup>. 699,143. Horse collar. Edwin L. Brundage, East Orange, New Jersey.  
 699,297. Heel cushion. Otto Eick, Baltimore, Maryland.  
 699,373. Soft tread horseshoe. Orion E. Dyson, Chicago, Illinois.  
 699,383. Insulating composition and method of producing same. Adolf Gentzsch, Vienna, Austria.

- 699,401. Exercising device. William F. Lott, East Orange, New Jersey.  
 699,549. Cushioning device for boots or shoes. Frank P. Macintyre, Philadelphia, Pennsylvania.  
 699,562. Rubber boot or shoe. Joseph L. Perry, Auburn, Rhode Island.  
 699,568. Heel for boots or shoes. John C. Rea, Paterson, New Jersey, assignor of one-half to Robert A. Roe, Paterson.  
 699,622. Manufacture of playing balls. Eleazer Kempshall, Boston, Massachusetts, assignor to the Kempshall Manufacturing Co., a corporation of New Jersey.  
 699,623. Manufacture of Golf Balls. *Same*.  
 699,632. Manufacture of golf balls or other articles. Francis H. Richards, Hartford, Connecticut, assignor to the Kempshall Manufacturing Co.

#### Trade Marks.

- 38,218. Rubber boots and shoes. Thomas Crowley, Lambertville, New Jersey.

ISSUED MAY 13, 1902.

- 699,653. Dental vulcanizer. John S. Campbell, London, England.  
 699,656. Hose rack. Edward Cliff, Newark, New Jersey, assignor to Cliff & Guibert Co., New York city.  
 699,743. Eraser tip for pencils. Willard H. Brownell, Battlecreek, Michigan.  
 699,757. Child's teething nipple. William Howell, Brooklyn, New York.  
 699,768. Boot or shoe heel. Franklin G. Saylor, Franklin, Massachusetts, assignor to Walter E. Austin, Boston.  
 699,778. Water bag. Hubbard H. Upham, New York city.  
 699,813. Playing ball. Francis H. Richards, Hartford, Conn., assignor to the Kempshall Manufacturing Co.  
 699,876. Golf ball. Eleazer Kempshall, Boston, Massachusetts, assignor to the Kempshall Manufacturing Co.  
 699,934. Eraser. Eric Swensson, Chicago, Illinois.  
 700,123. Playing ball. Eleazer Kempshall, Boston, Massachusetts, assignor to the Kempshall Manufacturing Co.  
 700,124. Playing ball. *Same*.  
 700,125. Spinning roll. Eleazer Kempshall, Boston, Massachusetts.  
 700,144. Golf ball. Eleazer Kempshall, Boston, assignor to the Kempshall Manufacturing Co.  
 700,154. Manufacture of golf balls. Francis H. Richards, Hartford, Conn., assignor to the Kempshall Manufacturing Co.  
 700,155. Manufacture of golf balls. *Same*.

ISSUED MAY 20, 1902.

- 700,655. Manufacture of golf balls. Eleazer Kempshall, Boston, assignor to the Kempshall Manufacturing Co.  
 700,656. Shell blank for playing balls. *Same*.  
 700,657. Manufacture of golf balls. *Same*.  
 700,658. Playing ball. *Same*.  
 700,659. Manufacture of playing balls. *Same*.  
 700,660. Golf ball. *Same*.  
 700,667. Horseshoe. Anthony M. Meisner, Chicago, Illinois.

#### Trade Marks.

- 38,317. Vehicle tires. New York Belting and Packing Co., Limited, New York city.

ISSUED MAY 27, 1902.

- 700,837. Solid rubber vehicle tire. Frank A. Seiberling, Akron, Ohio.  
 700,838. Atomizer. Cyrus J. Seltzer, Philadelphia, Pennsylvania, assignor to the Davidson Rubber Co., Boston.  
 700,840. Pneumatic tire. Enos Smith, Vernham Dean, near Hungerford, England, assignor to John Smith, Troy, New York, and Henry Smith, New York city.  
 700,871. Rubber tire setting machine. John K. Williams, Akron, Ohio.  
 700,942. Playing ball. Eleazer Kempshall, Boston, Massachusetts, assignor to the Kempshall Manufacturing Co.  
 700,943. Golf ball. *Same*.  
 700,944. Playing ball. *Same*.  
 700,945. Golf ball. *Same*.  
 701,124. Vaginal syringe. Charles F. Allen, Hueneme, California.  
 701,254. Billiard table cushion. Moses Bensinger, Chicago, Ill., assignor to the Brunswick-Balke-Collender Co.

#### Trade Marks.

- 39,332. Rubber footwear. Foot, Schulze & Co., St. Paul, Minnesota.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD offices at ten cents each, postpaid.]

## THE ENGLISH PATENT RECORD.

[\* Denotes Applications from the United States.]

## APPLICATIONS—1902.

- 7,126. Tom Griffin Richards, 18, Fulham place, Paddington, London. Improvements in India-rubber capped black lead pencils. March 24.
- 7,239. George E. Palmer, Thomas A. Palmer, and Lewis G. Edmund, Old Coach Works, Gower street, Swansea. Vehicle nave brake for rubber tired wheels. March 25.
- 7,305. John Hunter Clark, 133A, Argyle street, Glasgow. Improvements in rims and rubber tires for cycle and other wheels. March 26.
- 7,346. Talbot Spencer, 53, Clare road, Cardiff. Rubber and leather heel for boots and shoes. March 26.
- 7,389. George Edward Heyl-Dia, 6, Lord street, Liverpool. Pneumatic tires. March 26.
- 7,526. Outer covers for pneumatic tires. March 29.
- 7,543. Harry Jackson, 36, Temple street, Birmingham. Pneumatic tires. March 29.
- 7,587. Frederic Delpoux and Hippolyte Josephe La Force, 322, High Holborn, London. Method of attaching India-rubber to wheels. March 29.
- 7,798. Joseph Butler, William Bell, William Andrew Jones, and James Bate, 5, John Dalton street, Manchester. Outer covers of pneumatic tires. April 3.
- \*7,935. Eleazer Kempshall, 19, Holborn viaduct, London. Improvement in the manufacture of playing balls. April 4.
- 8,005. Theodore Houben, 111, Hatton garden, London. Pneumatic tires. April 5.
- 8,145. Albert James Astbury, Oakdene, Barnt Green, Worcestershire. Pneumatic tires for motor cars. April 8.
- 8,305. Charles Davies, 6, Lord street, Liverpool. Pneumatic tires. April 9.
- \*8,406. Eleazer Kempshall, 19, Holborn viaduct, London. Improvement in golf balls. April 10.
- \*8,407. Francis Henry Richards, 19, Holborn viaduct, London. Improvements in the manufacture of playing balls. April 10.
- \*8,408. Francis Henry Richards, 19, Holborn viaduct, London. Same. April 10.
- \*8,409. Eleazer Kempshall, 19, Holborn viaduct, London. Improvement in golf balls and the like. April 10.
- \*8,410. Francis Henry Richards, 19, Holborn viaduct, London. Improvements in golf balls and the like. April 10.
- 8,506. Alfred Ducasble, 18, Southampton buildings, Chancery lane, London. Cellular rubber tires. April 11.
- 8,541. John Alexander George Ross, Newcastle-on-Tyne. Rubber and eraser tips, with and without holders. April 12.
- 8,707. Charles Douglas Cassidy, 16, Clare street, Dublin. Detachable tread and shield combined for pneumatic tires, air tubes, and covers for same. April 15.
- \*8,739. Alfred Julius Boulton, 111, Hatton garden, London. Improvement in type-curing or vulcanizing presses. [Arthur Hudson Marks, United States.] April 15.
- \*8,802. Francis Henry Richards, 19, Holborn viaduct, London. Improvements in playing balls. April 15.
- \*8,803. Eleazer Kempshall, 19, Holborn viaduct, London. Improvement in golf balls. April 15.
- \*8,804. Eleazer Kempshall, 19, Holborn viaduct, London. Same. April 15.
- 8,847. Thomas Belvoir, 82, Mark lane, London. Elastic exercising apparatus for physical culture. April 16.
- 8,868. John Russell Brunt and Richard Charles Pitt, 45, Southampton buildings, Chancery lane, London. Pneumatic tires. April 16.
- \*8,982. Eleazer Kempshall, 19, Holborn viaduct, London. Improvement in golf balls. April 17.
- \*8,983. Eleazer Kempshall, 19, Holborn viaduct, London. Same. April 17.
- \*8,984. Eleazer Kempshall, 19, Holborn viaduct, London. Same. April 17, 1902.
- \*8,985. Eleazer Kempshall, 19, Holborn viaduct, London. Same. April 17.
- 9,009. John Cockburn, 32, St. Vincent street, Glasgow. Wheel rims and rubber tires for vehicles. April 18.
- 9,055. Thomas Henry Vercoe, 19, Southampton buildings, Chancery lane, London. Puncture resisting device for pneumatic tires. April 18.
- \*9,240. Eleazer Kempshall, 19, Holborn viaduct, London. Improvement in golf balls. April 22.

- \*9,241. Eleazer Kempshall, 19, Holborn viaduct, London. Same. April 22.
- \*9,242. Eleazer Kempshall, 19, Holborn viaduct, London. Improvement in the process of making golf balls. April 22.
- \*9,243. Eleazer Kempshall, 19, Holborn viaduct, London. Same. April 22.
- 9,650. Edward Blundell, 4, High street, Wem, Shropshire. Liquid patching tire cement. April 26.
- 9,654. Frederick William Mitchell, 121, Elgin road, Seven Kings, Essex, Enema syringe. April 26.
- 9,698. Frederick William Ingram, 23, Southampton buildings, Chancery lane, London. Valve for footballs, pneumatic tires and the like. April 26.

## PATENTS GRANTED.—1901.

- 22,292. Method of attaching rubber tire to rim. Williams, W. F., 4, Denman street, Piccadilly circus, London. December 7, 1901.
- 22,384. Diving dress. Sprang, F. H., 86, Grange road, Bermondsey, London. December 8, 1901.
- 22,427. Method of attaching rubber tire to rim. Barber, J., 36, Glebe street, Turncroft Lane, Stockport, Cheshire. December 10, 1901.
- 22,710. Inflators for tires. Hulme, F., 35 Seymour Grove, Old Trafford, Manchester. December 13, 1901.
- 22,739. Inflating. Rupp, P., Ellwangen, Wurtemberg, Germany. December 13, 1901.
- \*22,864. Pneumatic tire. Barrows, W. A., No. 491, Wells street, and Sanford, N., No. 1450 Newport avenue, Chicago, United States. December 14, 1901.
- 22,936. Pneumatic tires. Shone, W., Upton park, Chester. December 15, 1901.
- 23,059. Manufacture of rubber tires or other articles by successive vulcanization. Falconnet, H., and Perodeaud, M., Choisy-le-Roi, France. December 17, 1901.
- 23,058. Pneumatic tires. Jackson, E. G., Oakfield, Quernmore road, Stroud green, London. December 17, 1901.
- 23,063. Exercising apparatus. Oberst, A., 6 Colonnenstrasse, Schoneberg, near Berlin. December 17, 1901.
- 23,210. Pneumatic tire cover. Foin, A., Vernon (Eure), France. December 19, 1901.
- 23,529. Pneumatic tire. Black, A., 32, St. James' street, London. December 22, 1901.
- 23,568. Pneumatic tire. Lyon, S. G. R., 91, Kennington road, London. December 24, 1901.
- \*23,603. Gutta-percha substitutes. Boulton, A. J., 111 Hatton garden, London. [Ralli, P. C.; Mayer, H., and Toch, L.; New York, United States.] December 24, 1901.
- \*23,607. Rubber tire and method of attaching. Lake, H. H., 45, Southampton buildings, London. [Turner, F. H.; Hartford, Connecticut, United States.] December 24, 1901.
- \*23,666. Rubber tire. Leach, O. L., No. 102 Prairie avenue, Providence, Rhode Island, United States. December 27, 1901.
- 23,713. Cutting rubber washers. Pfister, V., 12, Anderson road, Erdington and Byrne, F. A., Calthorpe House, Gravelly hill, Birmingham. December 28, 1901.
- 23,751. Puncture proof pneumatic tire. Boulton, A. J., 111, Hatton garden, London. [Granara, A.; Genes, Italy.] December 28, 1901.
- 23,752. Puncture proof pneumatic tire. Boulton, A. J., 111, Hatton garden, London. December 28, 1901.
- 23,770. Pneumatic tire. Seddon, F. J., 846 Rochdale road, Harpurhey, Manchester, and Seddon, E. H., Woodbourne, Brooklands, Cheshire. December 29, 1901.

## PATENTS GRANTED.—1902.

50. India-rubber compositions. Weber, C. O., Heathfield, Middleton road, Crumpsall, near Manchester, and Cairns, A., Winterdyne, Uddingston, near Glasgow. January 1, 1902.
253. Pneumatic tires. Tolson, J. E., Meadow House, Dewsbury, Yorkshire. January 4, 1902.
- \*260. India-rubber valves. Pickett, E. F., 12, Bessie Place, Buffalo, New York, United States. January 4, 1902.
- \*327. Pneumatic tires. Boulton, A. J., 111, Hatton garden, London. [Marks, A. H.; Akron, Ohio, United States.] January 5, 1902.
- \*306. Tubular lining for pneumatic tire. Ives, J. F., Cleveland, Ohio, and Gammeter, J. R., and Palmer, T. R., Erie, Pennsylvania, United States. January 7, 1902.
473. Method of attaching rubber tire to rim. Evans, A. E., Ararat, House, Newport, Shropshire. January 8, 1902.
- \*480. Exercising apparatus. Lake, H. H., 45, Southampton buildings, London. [Korth, J. C.; Harrison, New York, United States.] January 8, 1902.

## DESTRUCTION OF GUTTA TREES IN MINANDAO.

IN regard to the order issued by the Forestry bureau in the Philippines, against the cutting down of Gutta-percha and Rubber trees, Frank J. Dunleavy, writing to THE INDIA RUBBER WORLD from Catabato, May 1, stated that it continued to be ignored. From October, 1901, to March 15, there had been 259,483 pounds of Gutta-percha and Rubber exported from Catabato—estimated from the duties collected there for the Forestry bureau. The local office had been in charge of a native Filipino, who had grown rich in a few months, on a small salary, through "undervaluing the products, much to the joy and profit of the 'Chinos' [traders] and himself." After the visit of a forestry inspector a better valuation was made. The government is now collecting about 1500 pesos [Mexican dollars] a month on Gutta-percha, "and every peso represents the destruction of 8 to 10 trees, or say 12,000 trees a month."

Some of these trees, according to Mr. Dunleavy, are Balata (?) yielding up to 25 pounds, but the yield generally averages about 3 pounds. "I have seen large trees on the ground that had been felled for months, and on striking the trunk with a bolo, latex flowed out"—which would indicate very incomplete extraction in the first place.

Mr. Dunleavy had made two trips across the island of Minandao, prospecting for Gutta-percha. The mountain tribesmen cut down the trees under the direction of the Moros. The latter make a pretense of buying the Gutta-percha, giving a yard or two of gay colored cotton cloth—worth not more than 20 cents—for perhaps 20 pounds of Gutta. At the coast it is sold to a Chinese trader for \$20 or \$30 [Mexican], in cloth, per pikul [137½ pounds], or about 7½ to 11¼ cents a pound, gold. The Gutta further changes hands at Catabato, and again at Singapore, each time at a good profit to the "Chinos." One Moro "datto" [leader] has five wives, three of whom belong to as many different mountain tribes, and who influence their people to bring Gutta-percha to their datto. An example of this Moro's trading was his securing 214 pounds of Gutta-percha from ten men brought in by his wives, for goods worth probably \$9 [Mexican], or hardly more than 2 cents, gold, a pound. The Moros have spread over the Gutta-percha districts, encouraging the local tribesmen to neglect growing food to collect Gutta, until the latter have become practically dependent on the Moros. The latter care only for the largest immediate profit possible, and under their influence the destruction of trees above referred to progresses steadily.

A Monabo whom our correspondent invited to accompany him as a guide, said that he did not dare to go outside the district, since he owed the head Moro 20 cents [Mexican], and that if it was not paid within a certain time it would grow to 40 cents, and then to 80, and then, perhaps, so large that he could never get out of debt, and would thus be practically owned by his creditor for life. The only remedy for such conditions, says Mr. Dunleavy, is for the Philippine government to appoint a resident official to look after these people, who are kindly, honest, hardworking, and worth attention.

At Lintago it was found that Gutta, such as would bring \$80 [Mexican] a pikul at Catabato, was being bought from the Subano and Montes tribes for \$12 to \$15, paid in cotton cloth. Mr. Dunleavy was the first white man ever seen at some of the places he visited, and the natives had no idea of the real value of the Gutta they had been induced to gather.

"I have had many inquiries from the United States," writes Mr. Dunleavy, "in regard to chances for trading in Gutta-percha and Rubber on this island. But as the Forestry bureau makes no attempt to enforce the law regulating the gathering of these products, I can only see a poor future for Americans in this trade under present conditions. Let the Forestry bureau either say that trees shall not be cut down, and enforce the laws, or say 'Cut the trees and get their product!' Then an American entering the trade would know where he stood, and if the policy of destruction should be adopted, a future supply of Gutta-percha could be assured by planting."

## GUTTA-PERCHA IN GERMAN NEW GUINEA.

THE reported discovery of Gutta-percha in New Guinea, by Herr Rudolf Schlechter, representing the German colonial committee, has already been mentioned in THE INDIA RUBBER WORLD [May 1, 1902—page 255]. In *Der Tropenpflanzer* (Berlin) Herr Schlechter reports his investigations in detail. Leaving Stephansort, on the north coast of Kaiser Wilhelm Land—the German section of New Guinea—his party spent several days in travel through dense swamps, toward the Bismarck mountains. Near the Goldfields station, at an altitude of 400 meters, they found Gutta-percha of good quality. They felled some large trees, which Herr Schlechter identified as a species of *Palauquium* (*Dichopsis*), the product being equal to, if not identical with, the product known to the Malays as "getah taban merak," and belonging to the best type of Gutta-percha. The material found had the same reddish tinge as that seen in Perak. "The influence which this new discovery," writes Herr Schlechter, "if properly exploited, will lend to the development of New Guinea is inevitable. We have in this, discovered the first merchantable product of New Guinea. The treasure will now prove of still greater value, as all the other Gutta lands, all situated west of Borneo, are from year to year essentially diminishing in their quota of the better class of Gutta." Herr Schlechter is convinced that the *Palauquium* species is plentiful in the region visited by him. He reports also the discovery of India-rubber, but this had already been known to exist in the British possessions in New Guinea, whence, indeed, some rubber has been exported, though not so much now as formerly.

## MENDE'S VACUUM DRYING CHAMBERS.

THE advantages of drying material of all kind in vacuum chambers are so thoroughly established that they hardly need comment. It may interest those, however, who are considering the installation of such systems, to review the following points in favor of the Mende system. First, materials which suffer from heat and from the oxidizing action of the atmosphere are in no wise injured by this method, as the heat is low and air is not present. Second, the time of drying is reduced from weeks or days to a few hours. Third, valuable solvents can easily be reclaimed and used again. Fourth, the space occupied by the apparatus is very small, while the daily drying capacity of the chambers is very large. Fifth, the consumption of steam is a mere nothing, while the first cost of vacuum drying machinery is soon made up by economies that it effects. These chambers are constructed of steel or iron and can be coated and protected against any kinds of vapors. They are made either stationary or rotary, in sizes to suit convenience.

## THE EDITOR'S BOOK TABLE.

COMPRESSED AIR, ITS PRODUCTION, USES, AND APPLICATIONS. Comprising the Physical Properties of Air, from a Vacuum to its Liquid State, its Thermodynamics, Compression, Transmission, and Uses as a Motive Power. By Gardner D. Hiscok, M. E. New York: Norman W. Henley & Co., 1901. [Cloth. 8vo. pp. 822. Price, \$5.]

THIS work is not only the most comprehensive, but it is practically the first, devoted to the commercial uses of compressed air, especially in its application to the mechanical arts, outside of occasional papers presented to engineering societies or special articles in various technical journals. While the use of air in its lower condition of compression for power and for mechanical purposes has been known from the earliest ages, the results of the development in this field during the past few decades have well nigh revolutionized some branches of engineering, and greatly facilitated the reduction of cost of mechanical work in many important departments.

The author of this work appears to have devoted many years to the collection of the material which he has condensed within it, while filling an editorial position. The result of such deliberate preparation is to be found in a concise, readily comprehensible style, and the arrangement of the chapters in such sequence as to prove most convenient for the student of his subject, or for him who uses the work only as a book of reference.

This volume contains forty air tables, involving calculations of use in arranging for the compression of air, as well as for the utilization of its countless applications. There are also no fewer than 545 illustrations, including both compressors and pneumatic tools, indicating the application of compressed air to almost every conceivable industrial purpose. It will prove of interest to rubber manufacturers to know how many various forms of pneumatic tools there are, the utility of which depends upon the employment of rubber hose for the transmission of the air.

This new demand for hose, by the way, has resulted in the necessity for hose capable of meeting new requirements, and has formed an element in the trade of no small importance to the rubber industry. Another important use for rubber hose has occurred in connection with railroad air brakes, and we notice that in the list of patents issued in the United States on compressed air and its appliances, the author has included some pneumatic tires, which form a third important branch of rubber production based upon the modern uses of air.

LES LANDOLPHIÈRES (LIANES A CAOUTCHOUC) DU SÉNÉGAL, DU Soudan, et de la Guinée Française. Par Henri Hua et Aug. Chevallier. Paris: Augustin Challamel. 1901. [Paper. 8vo. Pp. 36. Price, 1.50 francs.]

A STUDY of the rubber species of a district which, while long known to yield rubber, has come lately into a wider commercial importance. [See THE INDIA RUBBER WORLD, November 1, 1901.] The contents of this brochure appeared originally in the *Journal de Botanique* (Paris), in the first four issues of Vol. XV.

EASTERN PERU AND BOLIVIA. BY WILLIAM C. AGLE. SEATTLE: The Homer M. Hill Publishing Co. [1901.] [Paper 12mo. Pp. 48. Price 50 cents.]

A READABLE narrative by an American mining engineer of many years experience in the countries named, with incidental accounts of their mineral and other resources, which he regards as exceeding valuable. In view of the rate of destruction of the Caucho trees, he thinks it would be advisable—and profitable—to form plantations.

## OTHER PUBLICATIONS RECEIVED.

INTERSTATE Commerce Commission. Thirteenth Annual Report on the Statistics of Railways in the United States, for the year ending June 30, 1900. Washington: Government Printing Office, 1901. [Cloth. 8vo. 324 pp.]

## INDIA-RUBBER GOODS IN COMMERCE.

## EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values for the first ten months of the current fiscal year, compared with the same months of three years preceding—not including exports to Hawaii and Porto Rico:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
July-March, 1901-02...	\$457,003	\$914,455	\$1,252,572	\$2,624,030
April, 1902....	57,467	25,216	184,527	267,210
Total .....	\$514,470	\$939,671	\$1,437,099	\$2,891,240
1900 01 ..	448,085	662,071	1,432,124	2,542,280
1899 00 ....	439,220	329,686	1,133,094	1,902,000
1898 99 ....	(a)	214,330	1,194,397	1,408,727

(a) Included in "All Other" prior to July 1, 1899.

Pairs of rubber footwear exported in the same periods:

1898-99.	1899-1900.	1900-01.	1901-02.
393,830	597,614	1,349,063	2,367,611

Exports of reclaimed rubber during the same months were:

1898-99.	1899-1900.	1900-01.	1901-02.
\$275,435.	\$387,397.	\$364,856.	\$318,711

## GREAT BRITAIN.

EXPORTS of rubber manufactures during January-April:

	1900	1901	1902
Boots and shoes .....	£489,631	£44,539	£41,911
Unenumerated .....		348,272	356,216

Total..... £489,631 £392,811 £398,127

There were also exported during January-April, 1902, "Apparel and slops, waterproofed by any process," to the value of £93,431.—The number of pairs of rubber boots and shoes exported during the first four months of 1902 was 386,988, against 394,092 for the same period in 1901.

## DEATH OF GEORGE P. DODGE.

GEORGE POMEROY DODGE, president of the Mineralized Rubber Co. (No. 18 Cliff street, New York), died on June 21, at his home in Great Neck, Long Island, after an illness of only four days, of pneumonia. Born in Pittsfield, Massachusetts, in 1837, Mr. Dodge traced his lineage back on several lines to the first settlers, he being eighth in descent from William Dodge, who came to Salem in 1629. His great-great-grandfather was General Seth Pomeroy, of the French wars and of Bunker Hill fame. In 1851 his father, N. S. Dodge, went to England as commissioner to the great London Exhibition, and for some years remained abroad with his family. George P. Dodge became interested in the India-rubber industry, being at one time connected with Charles Macintosh & Co., at Manchester. Later he returned to America and established himself as a rubber goods merchant, his business becoming incorporated under the laws of New York state in March, 1886, as the Mineralized Rubber Co. The business will be continued by those who have been most closely connected with Mr. Dodge in its management. The former secretary of the company, John Schreppe, has been elected president, and William A. Dale, who has long been in charge of the order department, becomes secretary. Mr. Dodge's final illness developed very suddenly, he having visited his office as usual as late as Tuesday of the week in which he died on Saturday. The interment occurred on Monday at Great Neck, at which place Mr. Dodge had resided for twenty-five years. The deceased was a brother of Colonel Theodore A. Dodge, who for many years past has also been interested in the rubber trade.

## RUBBER MEN AND RUBBER TOPICS.

IT is not often that it falls to the lot of the tourist in Egypt nowadays to get even a single genuine scarab. But Mr. H. C. Corson, of New York, and lately of the Akron Rubber Works, while on the Nile last winter, became the possessor of a bracelet composed of nine genuine scarabs, some of them bearing the inscriptions of Pharaohs antedating the builders of the great pyramids. The scarabs are gems, usually cut in obsidian, in the form of a beetle, engraved with hieroglyphics, each meant to represent one of the many Egyptian deities, and were worn by the ancients as an amulet. Mr. Corson's "find" is a valuable one and lately formed the subject of a page of description by an authority on such subjects, in the *New York Times*.

In connection with the inquiry that appeared in a recent issue of THE INDIA RUBBER WORLD for rubber suction cups, Mr. George A. Alden, of Boston, says that he recollects the time, somewhere back about 1867, when there were a number of articles in newspapers, claiming that thieves were purchasing rubber suction cups, attaching them to both hands and feet, thus enabling them to climb up the sides of buildings and enter second story windows in the pursuit of their calling. The incident is an interesting one, although Mr. Alden appears to be sceptical regarding the ability of the thieves to scale brick walls in that manner.

A SUMMER residence is to be erected for Colonel Harry E. Converse, of the Boston Rubber Shoe Co., at Marion, Massachusetts, which will probably be the largest and finest on the shore of Buzzard's Bay. The house will be located on the picturesque promontory, on the north shore of the bay, known as Charles's Neck, the whole of which has been purchased by Colonel Converse, who has chosen "The Moorings" as the name of his new country seat. The architect for the house and barn is Tristram Griffin, of Boston. It is expected that a year will be required for the completion of the buildings.

MR. JOHN J. WATSON, JR., of Providence, Rhode Island, who was lately elected assistant treasurer of the United States Rubber Co., is one of the bright young men that Colonel Samuel P. Colt, president of that company, has as business allies and associates. He was formerly in the employ of the Industrial Trust Co., of which Colonel Colt is also president, and was promoted from his position with that concern to the treasurership of the Joseph Banigan Rubber Co. He still retains the latter position, and remains in Providence a day or two every week, devoting the rest of his time to his duties in the office of the United States Rubber Co. in New York.

WHAT is known as the Hagberg bill, now before the Massachusetts senate, is causing considerable feeling in the city of Worcester. The bill in brief provides that manufacturing corporations in Massachusetts must pay their employés in currency, instead of in checks. This has stirred up the American Steel and Wire Co., so it is said, and it is hinted that its Washburn & Moen plant, in case the bill passes, may be moved from Worcester to some town in the West. Of course, that would mean also the removal of their very large rubber plant, used in the insulation of wire.

THE following incident may be somewhat apocryphal, but it is nevertheless true to nature, and it would, therefore, be a pity if it remained untold. It seems that about the time Mr. Joseph Banigan was quietly marketing his holdings of United

States Rubber stock, and indeed when he had parted with nearly all of it, a high official entered his private office in great agitation and said: "Mr. Banigan, I understand that you sold most of your stock." "Genial Joseph" drew himself up to his full height of six feet and one, and towering above his questioner replied: "Mr. Blank, I believe that I am at this moment the largest individual stockholder in the United States Rubber Co." The gentleman apologized and retired, whereupon Mr. Banigan turned to a listener and said: "As I weigh nearly 250 pounds I think it is perfectly true that I am the *largest* stockholder."

EDWARD ATKINSON's work toward the establishment of a school for insurance engineering, in connection with the Massachusetts Institute of Technology, seems about to bear fruit, and it is to be hoped that the \$150,000 to start the work will be soon raised. The way in which this interests rubber manufacturers is in connection with the apparatus that will be installed for the extinguishing of fires, and also the knowledge the new engineers will get of various types of fire hose.

## "PARA RUBBER" FROM CEYLON.

CEYLON exported last year 7392 pounds of rubber from cultivated plantations, stocked with the "Pará" variety, which was sold in London at good prices, one lot bringing 4s. 1½d. per pound, against 3s. 9½d. paid for the "best Pará" during the same week. Director Willis, of the royal botanic gardens, in Ceylon, states in his annual report for 1901 that "India-rubber may now be regarded as established as a minor product in the low country. . . . Extension of planting continues in suitable districts, and probably 3000 acres are now in rubber."

An English rubber manufacturer writes to THE INDIA RUBBER WORLD: "We have made several experiments with Ceylon rubber which have turned out fairly satisfactorily. There is little or no difference between it and the Pará obtained from Brazil." What follows, from the same letter, is not so clear, in view of the information already given in regard to prices realized for the Ceylon product: "The difference in price makes it a useful adjunct to the rubber manufacturer's list of economical rubbers, but I do not know whether this information will, in the near future, render it less economical; I hope not."

## NOTES FROM PARA.

THE United States consul, Mr. Kennedy, reported, May 7: "Owing to hard times, low prices, and certain unfavorable local conditions, there are various opinions as to whether the steady increase in the output of rubber during the past few years will be maintained in 1902-03. It is generally believed, however, that the rapid development of the new rubber districts on the upper Amazon River and its affluents will more than make up for any falling off from these causes. I am informed that already many large bands of rubber gatherers are organizing, and that preparations on a large scale are being made for harvesting next season's crop."

The contract for the improvements at the port of Pará has been signed by the Brazilian government, and includes the building of a wall in the river, somewhat beyond the end of the present piers, parallel with the shore, for about 1½ miles, the space inshore to be occupied by warehouses and all facilities for loading and unloading vessels, wharves, etc. The channel is to be dredged, so as to admit the dockage of the largest vessels. The amount of the contract is about \$4,250,000 and the time limit ten years.

## NEWS OF THE AMERICAN RUBBER TRADE.

## RUBBER GOODS MANUFACTURING CO.

THE thirteenth regular quarterly dividend of 1¼ per cent. on the preferred stock was payable on June 16, to holders of record of June 6, at the offices of Baring, Magoun & Co. (New York), the company's transfer agent. The disbursement amounted to \$140,899.50.—The following changes of officers were made at a meeting of the board on May 28:

*President*—ARTHUR L. KOLLEK. ALDEN S. SWAN.  
*Vice President*—EUGENE UNDERHILL.  
*Treasurer*—ALVAN TOWNBIDGE. JAMES B. TAYLOR.  
*Secretary*—WILLIAM A. TOWNER.

Mr. Swan is a merchant and director in several corporations and has been on the board of the Rubber Goods company from the beginning. Mr. Taylor is one of the new directors, and is a member of the stock brokerage firm of Talbot J. Taylor & Co., (New York).

## COMBINATION RUBBER AND BELTING CO.

THIS company, since taking charge of the factory at Bloomfield, New Jersey, in March, 1901, has experienced a steady growth in orders, which has made it necessary to extend its buildings and purchase additional machinery. Contracts have been given out for a three story brick building, about 75×200 feet; also for a new machine shop to increase the facilities of the company so that it can make all its own molds and shafts for rolls. There have been ordered a two-plate Farrel hydraulic press, 30×6 feet; several calenders, mills, and grinders of the latest design; hose and belt making machinery; and new engines and boilers. With this increase, the company will be able to turn out \$1,000,000 worth of goods per year.

## WOONSOCKET RUBBER CO.

THE office and office force of this company have been transferred from Providence, Rhode Island, to the office building of the "Alice" mill, at Woonsocket, in pursuance of the policy of concentration of office forces recently adopted. Mention has been made already of the consolidation of the pay roll force of the two factories of the Woonsocket company.

## A DECISION FOR THE VICTOR RUBBER TIRE CO.

AT Cincinnati on May 31, in the United States circuit court, Judge Thompson handed down a decision in the case of The Rubber Tire Wheel Co. *et al.*, v. The Victor Rubber Tire Co. *et al.*, in Equity, No. 4830, involving the validity of the Grant patent on solid rubber carriage wheel tires. The suit had been brought for alleged infringement of the "Kelly-Springfield" tire. The decision reads:

Bill dismissed at complainant's costs on the authority of the case of same complainants v. The Goodyear Tire and Rubber Co., decided by the United States circuit court of appeals, sixth circuit, May 6, 1902, declaring the Grant patent void.

## AN ELECTRIC LIGHT WIRE POOL.

THE New York newspapers reported recently that a pool had been organized by the insulated wire companies, for the regulation of prices, and that the same was likely to come to an end on account of the withdrawal of The Safety Insulated Wire and Cable Co. It appears that a wire pool was formed a short time ago, but covering only such wire as is used in the

installation of electric light plants in buildings. Although this is a class of trade to which the Safety company has never given much attention—their work having been in large contracts for street railway, electric light, and submarine cables—Mr. Requa, the then treasurer of the company, agreed to go into the combination. At the first meeting of the new board of directors of the Safety company it was stated that the wire companies had not adhered to the rules of the agreement in bidding for the work on a large store being erected in New York, since which time the president of the company has sent in a notification of withdrawal from the agreement. It is stated that out of their trade of \$2,000,000 a year, the class of work to which the agreement related has not represented over \$100,000 of their product.

## LARGE ORDERS FOR RUBBER BELTING.

ONE of the largest contracts for rubber elevator and conveyor belts that has been placed for some time past has just been awarded to The Whitman & Barnes Manufacturing Co. (Akron, Ohio) by the Southern Pacific Terminal Co., for their new grain elevators at Galveston, Texas. The order calls for 11,708 feet of "Hontas" rubber belting, running from 22" to 36" widths, 4 and 6 plies, and weighing approximately 60,000 pounds. It is understood that this contract was secured in competition with most of the prominent rubber belting manufacturers in the country. The Whitman & Barnes company have also captured one of the largest orders for rubber drive belts that has been placed in Massachusetts for some time.

## CONSOLIDATED RUBBER TIRE CO.

ISAAC L. RICE, for some years past president, has been elected to the newly created office of chairman of the board of directors, and as such will act in an advisory capacity. Van H. Cartmell, who has been second vice president, has been elected president, to succeed Mr. Rice. Mr. Cartmell was formerly manager of the New York branch of the Rubber Tire Wheel Co. and, since its merger in the Consolidated Rubber Tire Co., has been connected with the principal offices of the latter, at No. 40 Wall street, New York.

## UNITED STATES RUBBER CO.

IN addition to the list of officers elected at the late annual meeting, as reported in the last INDIA RUBBER WORLD, the following additional positions have been filled by appointment by the board of directors:

*Assistant Treasurer*.—JOHN J. WATSON, JR.  
*Assistant General Manager*.—HOMER E. SAWYER.  
*Manager of Sales*.—EBEN H. PAINE.  
*Manager of Branch Stores*.—EDWARD R. RICE.

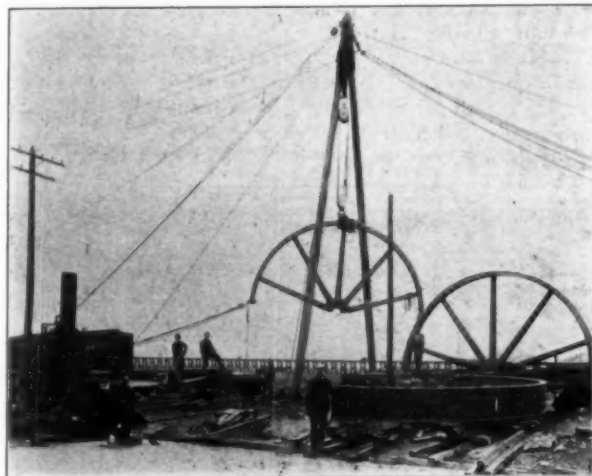
Mr. H. M. Sadler, Jr., who for some years has been assistant treasurer of the United States Rubber Co., and in addition has been assistant general manager for the past year, has been elected vice president of the Meyer Rubber Co. This new position, for reasons that recently have become existent, is one of importance, and one for which Mr. Sadler's familiarity with financial affairs specially qualifies him. As intimated in the late annual report of the United States Rubber Co., the Meyer Rubber Co. has acquired large security holdings in various enterprises, to insure the proper management of which it has been deemed best that they should be in exclusive charge of some one of financial experience and executive ability.

## THE GUM-CARBO COMPANY (BEAUMONT, TEXAS).

THIS company has been incorporated under the laws of Texas, with \$1,000,000 capital, to establish at Houston a factory for the production of the rubber substitute from petroleum referred to in THE INDIA RUBBER WORLD of April 1 [page 230]. The prime mover was Tom C. Swope, general manager of Huntley Oil and Refining Co. (Beaumont, Texas), who is president of the new corporation. F. W. True is vice president and R. E. Humphreys, secretary and treasurer, with offices for the present at Beaumont. The company desire to hear from manufacturers of machinery, including rubber machinery, with regard to supplying plant. It is hoped by the company that the factory will be in operation by November. Mr. Swope advises THE INDIA RUBBER WORLD that the new substitute will be called Gum-Carbo, and that from it they intend making high grade enamels, an indestructible paint for structural iron work, an acid and alkali proof paint for metal or wood, and ultimately a substitute for linseed oil for use in making paints and varnish. "Gum-Carbo will enter very largely into the manufacture of soft and hard insulating materials, in which particular line it will almost be at its best. It will be used in making rubber tires, shoes, mats, belting, packing, and all other rubber goods; it can also be vulcanized, and when vulcanized it can be used to make all hard rubber goods such as buttons, combs, brushes, electrical appliances, etc."

## NEW PLANT OF THE U. S. RUBBER RECLAIMING WORKS.

THE illustration on this page is based upon a photographic view of the work of putting in position a series of gears which form part of the power plant of the U. S. Rubber Reclaiming Works, at Buffalo, New York. The main building of the fac-



tory, on the left, is not shown in the picture, and by this time an additional building has gone up over the power plant. The three gears shown are each 22 feet in diameter and 24 tons in weight. The gears are connected each with a shaft extending through the main factory building, to afford power, and all are operated, through rope transmission, by an electric motor of 1500 H. P. under the same roof. This motor, by the way, shipped recently by the General Electric Co. from Schenectady, New York, is stated by them to be the largest induction motor ever constructed for an industrial establishment. The location of the factory of the U. S. Rubber Reclaiming Works is seventeen miles from Niagara Falls, the original source of the electric power utilized in the factory. It is expected that the new plant will be in operation by the middle of this month,

and in any event not later than the first of August. The large gears shown in the picture were supplied by the Dodge Manufacturing Co., Mishawaka, Indiana.

## NEW YORK STOCK EXCHANGE QUOTATIONS.

## UNITED States Rubber Co. :

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending May 24	2,290	16 1/4	14 3/4	1,020	57 1/4	56 1/2
Week ending May 31	815	15 1/4	14 3/4	500	57	56 1/2
Week ending Jun. 7	270	14 3/4	14 1/2	700	56 3/4	56
Week ending Jun. 14	20	15 1/4	14 3/4	160	55 1/2	55 1/2
Week ending Jun. 21	340	15	14 1/2	860	55	55

## RUBBER Goods Manufacturing Co. :

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending May 24	1,190	21	19 1/4	...	...	...
Week ending May 31	310	21	20 1/4	400	68	67
Week ending Jun. 7	1,310	20	19	1,195	68	66 1/2
Week ending Jun. 14	1,091	20	19	200	68	68
Week ending Jun. 21	480	20 1/2	19 1/4	265	65 1/4	65 1/4

## THE STRAUS SPONGE PATENT.

ALEXANDER STRAUS, of New York, who has long been connected with the rubber trade, has been allowed a patent embracing eight claims for a "Method of Forming Sponge Substitutes." Briefly, these claims cover the use of paraffine as a semisolvent for rubber, in which a certain amount of sulphur may be incorporated; the heating of the semi fluid mass, and its subsequent vulcanization. Certain of the claims cover the addition of water to distend the cells, and the use of a chemically acting cell-forming hydrocarbon.

## AMERICAN RUBBER CO.

THE annual report of condition, dated May 6, 1902, filed with the Massachusetts commissioner of corporations, compares with previous reports as follows:

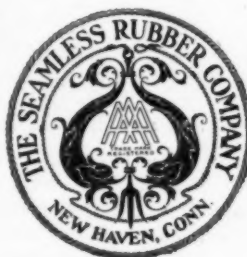
## ASSETS.

	1900.	1901.	1902.
Land and water power.....	\$ 37,287	\$ 37,287	\$ 37,287
Buildings.....	148,617	148,617	148,617
Machinery.....	136,927	136,927	136,927
Cash and debts receivable....	943,683	1,084,280	1,265,191
Stock in process.....	1,615,452	1,228,176	1,456,413
Patent rights.....	1,000	.....	.....
Miscellaneous.....	3,423	.....	.....
Total.....	\$2,886,389	\$2,635,286	\$3,048,155

## LIABILITIES.

	1900.	1901.	1902.
Capital stock.....	\$1,000,000	\$1,000,000	\$1,000,000
Debts.....	490,000	460,000	793,171
Dividends unpaid.....	150,000	.....	.....
Balance profit and loss.....	380,655	309,552	389,249
Reserve for depreciation.....	865,734	865,734	865,735
Total.....	\$2,886,389	\$2,635,286	\$3,048,155

## THE NEW SEAMLESS TRADE MARK.



THE Seamless Rubber Co. (New Haven, Connecticut), are bringing out an extra high grade of druggists' goods, which are to be in workmanship, quality, and packing, the very best that an up-to-date factory can turn out. These goods will be made in both red and white, and will all of them bear the accompanying artistic trade-mark.

## TRADE NEWS NOTES.

THE Manhattan Rubber Manufacturing Co. (New York) announce: "We have the pleasure to announce that, owing to the increased volume of our local business, we have installed another telephone wire. So many complaints have come in that our telephones are continuously busy that we have found it expedient to change our numbers and have three trunk lines to our office." The new numbers are 7260, 7261, and 7262 Cortlandt.

=The Franklin Rubber Co. (Boston, Massachusetts) have removed from No. 13 Franklin street, to more centrally located quarters at No. 155 Summer street.

=The sole agency for the United States for the rubber sponges manufactured by the Russian-American India Rubber Co. (St. Petersburg), has been acquired by Alfred H. Smith, Nos. 84-86 Chambers street, New York, who reports a large demand for these goods. In order to identify these sponges Mr. Smith has had registered a special trade mark for them, the chief feature of which is the word "Kleanwell."

=William C. Coleman (Boston), dealer in old and new scrap rubber, though not long established in the trade on his own account, has succeeded in building up an extensive business. He is not, however, a new man in the trade, having some time been the purchasing agent for the reclaiming department of The B. F. Goodrich Co. (Akron, Ohio), and having held the honorary positions of acting secretary and treasurer of the Rubber Reclaimers' Association. It was Mr. Coleman who first introduced the Standard packing of old rubber boots and shoes to the trade.

=Improvements are under way at the plant of the United Electric Light Co. (Springfield, Massachusetts.) Hazelton boilers, with an aggregate horsepower of 1800, are to be reset in 200 or 300 H.P. units, in the brick lined steel setting lately introduced by the Hazelton Boiler Co. (Rutherford, New Jersey.) This is a distinct advance over the old time brick work setting. The boilers will be arranged in batteries with square furnaces. Seven boilers at the Springfield plant occupy but 800 square feet of floor space.

=John H. Peterman, who was selling agent for the Milltown India Rubber Co. (Milltown, New Jersey), has taken charge of the rubber department of M. D. Weld & Co. (Chicago), who handle the Apsley Rubber Co.'s footwear.

=The officers and salesmen of the Brunel-Higgins Shoe Co. (Portland, Maine), by invitation paid a visit to the Fells factory of the Boston Rubber Shoe Co. on June 12, in connection with which a lunch was served. The salesmen of the jobbing house of A. P. Tapley & Co. (Boston), were similarly entertained at the factory on June 5, and those of McIntosh & Co. (Springfield, Massachusetts), on June 7.

=The Milford Rubber Co. (Milford, Mass.) are reported to be proofing 10,000 yards of cloth per day, or up to their capacity.

=The Robins Conveying Belt Co. (New York) have brought suit in the United States Circuit Court at Trenton, New Jersey, against the United and Globe Rubber Manufacturing

Cos., alleging infringement of the Robins patent for rubber conveying belts.

=With regard to the persistent rumors that the Hartford Rubber Works Co. may be sold to Colonel Pope, it is only necessary to state that such a sale, to be legal, would have to receive the vote of every stockholder in the Rubber Goods Manufacturing Co., at an annual meeting, preceded by a three months' notice of the proposed transfer.

=Mr. R. L. Chipman (Akron, Ohio), representative of George A. Alden & Co. (Boston), was a recent visitor to the offices of THE INDIA RUBBER WORLD.

=The Republic Rubber Co. (Youngstown, Ohio) are putting up on their property, not far from the factory plant, a boarding house with twenty rooms, and a dozen houses, for the exclusive use of their help. These buildings are to be pleasantly situated and will be, architecturally, as up-to-date and practical as are the splendid factory buildings of the company.

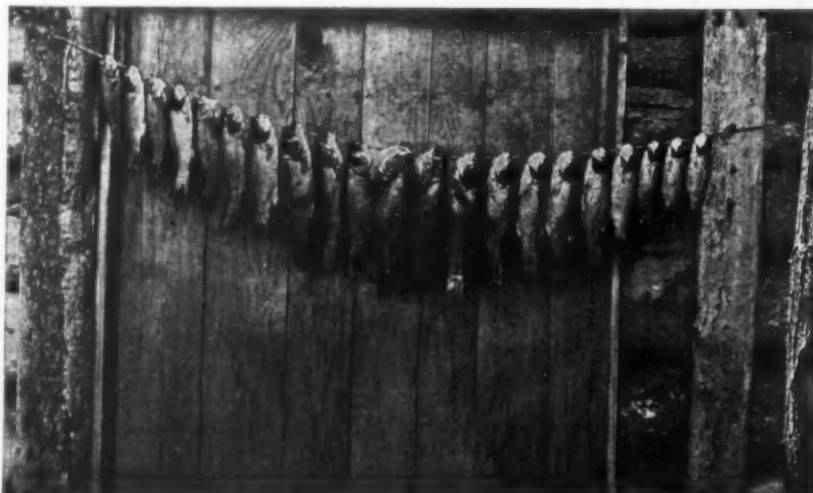
=The Monarch Rubber Co. (St. Louis, Missouri) have given up a portion of their large store on Washington avenue, retaining the street floor for offices and sales rooms and the basement for storage purposes, and erected a building on their factory grounds for storage purposes.

=George S. Andrus, general manager of the La Crosse Rubber Mills Co. (La Crosse, Wisconsin) has just installed a miniature experimental plant at his works, embracing a small washer, grinder, calender, vulcanizer, dry heater, and press.

=Monsieur Ernst Berlyn (Paris), agent in France for the Boston Rubber Shoe Co., spent several weeks lately in the United States.

=The name of Clarence H. Guild, secretary of the Woonsocket Rubber Co. and director in the Joseph Banigan Rubber Co., was inadvertently printed in the last INDIA RUBBER WORLD "Charles" H. Guild.

=While hard rubber scrap is an article collected in very small quantities, the aggregate of the trade is considerable. In one month recently nearly 40,000 pounds were handled by one dealer, and a single shipment made later amounted to 30,000 pounds.



A BEAUTIFUL summer resort owned by a gentleman connected with the rubber trade is known as Pine Grove Springs, Lake Spofford, New Hampshire. The elegant hotel on the lake is owned by James H. Stearns, of the rubber firm of Parker, Stearns & Sutton (New York). It may interest fisherman in the trade to see the reproduction of a string of bass caught on the lake not long since.

=William H. Farwell, New England representative of the Empire Rubber Manufacturing Co., will move this month from No. 289 Devonshire street, Boston, to more commodious quarters at No. 276—almost directly across the street.

=It is interesting to note that a number of pairs of aluminum boot trees, which more than six years ago were placed in one of the leading shoe factories, and have been in constant use ever since, show no signs of deterioration or wear, and must have paid for themselves many times over.

=The regular quarterly dividends of  $1\frac{1}{2}$  per cent. on the preferred stock of the American Chicle Co. and 1 per cent. on the common stock, have been declared, payable July 1 and July 10, respectively.

#### NEW ENGLAND RUBBER CLUB.

THE New England Rubber Club are planning an unusually interesting midsummer outing, for the afternoon and evening of July 22, when, through the courtesy of Arthur W. Stedman, chairman of the Sports committee, they will take possession of the finely appointed clubhouse and extensive grounds of the Country Club, Brookline, Massachusetts. Golf, baseball, tennis, squash, pool, and old-fashioned bowling are among the sports of the afternoon. The outing will end with one of the fine dinners for which the Club is famous.

#### TO MAKE TIRES AT MILLTOWN.

THE International Automobile and Vehicle Tire Co., mentioned in the last issue of this paper as having purchased the Meyer Rubber Co. factory at Milltown, New Jersey, have since been busy in arranging for the manufacture of tires at that place, for which purpose some machinery is being removed from the factory at Newton Upper Falls, though it is not intended to close that factory.

#### MILLTOWN INDIA RUBBER CO.

AT a receiver's sale in Milltown, New Jersey, on June 19, the plant of this company (in liquidation), including five acres of land, railroad sidings, three story factory building, boilers and engines, and a complete equipment of machinery and tools for the manufacture of rubber boots and shoes, was bought by Fred L. Smith, of Providence, Rhode Island, for \$66,500.

#### EMPIRE RUBBER MANUFACTURING CO.

ON June 3 General William H. Skirm, of Trenton, bought from George R. Cook 1232 shares in the Empire Rubber Manufacturing Co.—a controlling interest. This stock came into the possession of Mr. Cook at a time when General Skirm had become involved through indorsements for Frank A. Magowan—then an important figure in the rubber industry and president of the Empire company—under an agreement permitting Mr. Cook at the end of five years to fix the price at which General Skirm would have the privilege of buying the stock, failing in which he must sell. The shares were at once assigned to Howell C. Stull, as joint trustee for General Skirm and his creditors, for the benefit of the latter. The trustee received an offer of \$110 per share for the lot which the creditors felt should be accepted. General Skirm's friends, with a view to having him retain the management, offered a bond to indemnify the creditors against loss, but at a meeting of the latter on June 20 this plan was rejected, and the stock again changed hands, the consideration being \$135,520. Mr. Cook, for fifteen years a shareholder, and for several years past, treasurer and general manager, has resigned these positions and sold his original holdings of stock, and a reorganization of the company is in progress. General Skirm, as a result of these transactions, it is understood, will be able to pay his creditors 80 cents on the dollar.==It is understood that the majority of the Em-

pire company's stock has been purchased by C. Edward Murray and Charles H. Baker, of Trenton, and that both General Skirm and William H. Skirm, Jr., will remain connected with the company in their present positions. The company has been doing a very profitable business of late.

#### PERSONAL MENTION.

=Mr. E. H. Gorse, treasurer of The Monarch Rubber Co. (St. Louis), has just been elected secretary of the largest trust company in the state of Missouri, and is receiving congratulations from all of his friends, and the trust company may consider themselves very fortunate to secure his services. It is understood that he retains his interest in the Monarch Rubber Co.

=Mr. George Louis Richards, of the Stoughton Rubber Co. (Boston, Massachusetts), was married on June 11 to Miss Helen Raymond Robinson, of Malden.

=Mr. S. H. C. Miner, president of the Granby Rubber Co. (Granby, Quebec), will start early this month for British Columbia—an annual trip that he takes to look after his large copper interests in that part of the dominion.

=Mr. Hermann Reimers, of Reimers & Co. (New York), is at present travelling in Europe, with his family.

=Among the prominent New England rubber men who are at present abroad are: Henry C. Morse, treasurer of the Revere Rubber Co., Boston; Joseph Davol, president and treasurer of the Davol Rubber Co., Providence; and Frederick C. Hood, treasurer of the Hood Rubber Co., Boston.

=Mr. R. G. Lockwood, of the Davidson Rubber Co. (Boston), is now in Europe and expects to extend his outing until early in October.

=Mr. Charles J. Davol, secretary of the Davol Rubber Co. (Providence, R. I.) was married June 2, at the Union Congregational church, in Providence, to Miss Helen M. Byrne of that city. Mr. and Mrs. Davol on returning from their wedding trip, will reside at No. 29 Whitmarsh street, Providence.

=Mr. Charles H. Arnold, of the firm of Riemers & Co., Boston, is taking a summer vacation trip over the Canadian Pacific railway, a trip which, if his engagements permit, will take him to the coast.

=Miss Mary Wheeler Harrall, daughter of Mr. E. W. Harrall, of the Fairfield (Conn.) Rubber Co., and Mr. Edwards P. Rowland, of New York, were married June 25.

#### OBITUARY.

WILLIAM S. EATON, president of the Boston Belting Co., died June 1, at his home, No. 62 Commonwealth avenue, Boston. His death was unexpected, as he had a business engagement for the following morning. He was born in Boston, April 12, 1817, and had always made that city his home. His father was rector of Old Christ Church for twenty-seven years. After receiving a liberal education, the son engaged successfully in the Calcutta trade for many years. He was one of the organizers of the National Tube Works Co., and for twenty-five years was its treasurer, during which time its capital was increased from \$200,000 to \$2,500,000. Mr. Eaton was also a director in the National Bank of North America of Boston. He had been president of the Boston Belting Co. since December 22, 1890, and a director since April 20, 1881. Two sons and a daughter survive.

=The many friends of Mr. Charles A. Coe, of the Boston rubber trade, will sorrow with him in the loss of his wife, who passed away at their home in Cambridge, on May 29. In accordance with the wish of the dying mother, their only daughter, who was to have been married in June, was united to the man of her choice at the bedside of the stricken one.

## THE RUBBER TRADE AT AKRON.

BY OUR RESIDENT CORRESPONDENT.

THE Stein Double Cushion Tire Co. are now ready to fill orders for their patent rubber vehicle tire. They have completed a two story brick factory, 60x225 feet, in East Akron, and installed a part of their machinery. This company was incorporated in September last, under the laws of New Jersey, with \$100,000 capital, succeeding another company of the same name formed at Meadville, Pennsylvania, to market a tire patented by Charles Stein, the tires being made at that time under contract. The officers of the new company are C. K. Sunshine, president; J. Newman, vice-president and general manager; M. M. Newman, secretary and treasurer; M. J. Friedman, assistant manager; William J. Yeager (lately with the Goodyear Tire and Rubber Co.), superintendent; Jacob Haber, manager of sales. Mr. Stein is also connected with the business. A private railroad switch connects the factory with the Baltimore and Ohio system.

Work on the large addition being erected by The B. F. Goodrich Co. has progressed beyond the second story, and it is expected that the building will be ready for use by early fall. The Goodrich company are erecting a small experimental plant on a tract of land they purchased recently at Beaver and Carroll streets.

The Goodyear Tire and Rubber Co. have completed a real estate deal with the city of Akron that has been pending for more than a year. In return for the cession of a part of Factory street for their use, the company gave a small parcel of land to the city, and also \$3500 towards the building of a bridge adjacent to the property. The company's premises being thus enlarged, they will now erect a warehouse 100x50 feet, which has been under contemplation for some time past.

The Summit Rubber Co., who have just completed a factory at Barberton, have elected J. G. Hollinger, president and treasurer; Augustus Warner, vice-president; and H. M. Hollinger, secretary. All these are Akron men. The superintendent and practical rubber man of the company is E. J. Schutz, lately of Cleveland, Ohio.

The Pure Gum Specialty Co., at Barberton, have installed a new 150 H. P. engine, and have commenced work on a two story brick addition to their factory, 40x60 feet.

The Buckeye Rubber Co. have been very busy, and are much in need of more room. A one story addition to their vulcanizing department, 40x50 feet, is being constructed.

An extension of the local traction lines is being built to the plant of the Peoples' Hard Rubber Co. Vice-president A. B. Rinehart, of this company, has worked for six months to secure the building of this extension for the benefit of their employes.

Colonel George T. Perkins, president of The B. F. Goodrich Co., and Mr. O. C. Barber, a prominent stockholder of the Diamond Rubber Co., have given \$12,500 each to clear the Akron city hospital of debt. It is understood that Mr. Barber will bear the expense of the erection of a large addition to the present buildings. Among the thousands of rubber workers in Akron there is scarcely a week but some one from their ranks is benefited by the hospital, though as a rule the Akron rubber factories have been very fortunate in escaping accidents.

President W. B. Hardy, of The Diamond Rubber Co., returned early in June from a European trip of several weeks, and is expected to leave about July 10 for another journey abroad.

H. E. Raymond, manager of the sales department of The B. F. Goodrich Co., will leave about the middle of July for a three months' absence in Europe.

Vacations among rubber company officials and office men will be late this summer, and the annual picnics of the rubber factory employes will also probably be much later than usual. "It is because everybody is so busy," said Superintendent Marks, of the Diamond Rubber Co.

The new city directory of Akron indicates a population of over 50,000, of which number it is asserted that 20,000 are directly dependent upon the rubber trade for their support, while many more profit from it indirectly. There is not a page in the directory which does not contain the name of from one to ten persons described as being connected with the rubber interest.

## RUBBER NOTES FROM EUROPE.

THE Moscow Rubber Co. (Moskauer Gesellschaft für Gummiwaarenmanufaktur) have a capital of 1,969,000 rubles [\$1,102,066]. Receipts for 1901 amounted to 2,792,353 rubles; expenditures, 2,677,996 rubles; and net profits, 114,357 rubles [\$58,779.50]. The fixed property is estimated at 1,310,559 rubles; raw material, 472,032; manufactured goods, 1,082,762; hypothecated indebtedness, 452,000; sinking fund, \$8,792; debts, 2,000,000; credits, 2,300,883 rubles.

=The report for the last business year of the New York-Hamburger Gummiwaaren-Compagnie (Hamburg) as compared with the preceding year, makes this showing (in marks):

	1901.	1900.
Gross earnings.....	M 958,156	M 885,260
General expenses.....	436,922	375,580
Written off.....	62,778	55,794
Net profit.....	458,456	453,886
Stock capital.....	1,800,000	1,800,000
Mortgage (working capital).....	660,000	600,000
Preferred loan—5%.....	480,000	510,000
Reserve fund.....	413,470	413,470

=Herr Heinrich Strauss on May 1 celebrated the thirtieth anniversary of his official connection with the rubber factory of Schnek & Kohnberger, at Odrau (Moravia), Austria.

=The estate of the late James Dick, of R. & J. Dick, of the Greenhead rubber works, Glasgow, Scotland, has been officially recorded as being of the gross value of £1,077,034 9s. and the net value of £849,168 9s.

=The North Western Rubber Co., Limited, manufacturers of reclaimed rubber at Liverpool, have established offices in that city at 51, North John street. Ernest E. Buckleton, who was connected with the rubber industry in the United States for several years, is general manager.

=Rubber hose manufacturers who desire to tender for supplies for the London fire brigade are required to pay £1 for the specifications, which amount is refunded after a decision has been made, to all who have sent *bona fide* tenders and have not withdrawn the same. Contractors must pay workmen employed in making the goods not less than the rate of wages, and for not more than the number of hours, named in the specifications.

## RUBBER SHOE MACHINE IN GERMANY.

THE American rubber shoe machine has at last made its appearance. At least, we surmise that the patent, No. 12,318, applied for in the name of Henry James Doughty, Providence, Rhode Island, U. S. A., represents that invention. The patent notice mentions an "Arrangement for the manufacture of rubber shoes," and this is, no doubt, the "revolutionizing machine." Now, those interested can satisfy themselves to what extent they deem this invention of practical value; we are sorry to say that until the patent has been granted, we are constrained from giving any information in regard to it.—*Gummi-Zeitung (Dresden)*.

## REVIEW OF THE CRUDE RUBBER MARKET.

**T**O-DAY marks the beginning of a new crop year in the Pará rubber trade, and the point of first interest is to note the large increase of production during the past year over any previous twelve months. The arrivals (including Caucho) at Pará for six years were as follows (in tons):

1896-97.	1897-98.	1898-99.	1899-00.	1900-01.
22,320	22,250	25,370	26,670	26,610

Up to June 25 last the arrivals, since July 1, 1901, had amounted to 29,845 tons—indicating an increase for the whole crop year of 10 per cent. over the preceding year, and an increase of 18 per cent. over the average production of five years preceding. Recent conditions have been affected by the throwing upon the market, by the failure of a New York company a few months ago, of a large quantity of old rubber, equivalent to an increased production during the year of that amount, which would raise the percentage of increase for the past year very materially. No more is heard now of conditions in the Amazon country unfavorable to the bringing in of rubber—such as at one time were the basis of predictions of a short crop for the year just closed. The only thing ever likely to curtail the production of Pará rubber—at least until all the rubber area has been worked over—is a fall in prices much below the present level. This, on the other hand, seems unlikely while the present active demand for rubber continues. The production of other than Pará grades of rubber, though well maintained on the whole, no longer shows the rapid rate of increase which first followed the opening up of new districts in Africa, and thus is removed one factor in keeping down prices of Pará rubber. On the whole, therefore, rubber may be expected to come forward whenever a demand for it exists, and at a rate which will prevent, in the near future, a very marked advance. At the same time the production of rubber is not likely to be pressed so far as to send prices lower.

New York quotations on June 28 were:

PARÁ.		AFRICAN.	
Islands, fine, new....	@69	Tongues.....	@43
Islands, fine, old.....	@72	Sierra Leone, 1st quality	@61
Upriver, fine, new....	@71	Benguella. . . . .	@43
Upriver, fine, old....	@74	Cameroon ball.....	@43
Islands, coarse, new....	@45	Flake and lumps.....	@30
Islands, coarse, old...	@	Accra flake.....	@18
Upriver, coarse, new..	@56	Accra buttons.....	@44
Upriver, coarse, old..	@	Accra strips.....	@48
Caucho (Peruvian) sheet	@48	Lagos buttons.....	@41
Caucho (Peruvian) ball	@52	Lagos strips.....	@48
CENTRALS.		Madagascar, pinky...	@
Esmeralda, sausage...	@51	Madagascar, black...	@
Guayaquil, strip.....	@48	EAST INDIAN.	
Nicaragua, scrap....	@49	Assam.....	@53
Mangabeira, sheet....	@40	Borneo.....	@40

Late Pará cables quote:

Per Kilo.		Per Kilo.	
Islands, fine. . . . .	4\$400	Upriver, fine.....	4\$250
Islands, coarse.....	2\$300	Upriver, coarse.....	2\$150

Exchange, 12 3/16d.

Last Manáos advices:

Upriver, fine.....	5\$000	Upriver, coarse. ....	3\$300
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Exchange, 12d.

NEW YORK RUBBER PRICES FOR MAY (NEW RUBBER.)

	1902.	1901.	1900.
Upriver, fine.....	71 @74½	89 @93	89 @102
Upriver, coarse.....	56 @60	62 @65	65 @75
Islands, fine.....	70 @73½	85 @90	87 @99
Islands, coarse.....	45 @49	51 @60	47 @61
Cametá, coarse.....	51½ @53	58 @63	56 @65

## Para Rubber Statistics (Excluding Caucho).

	NEW YORK.		Total 1902.	Total 1901.	Total 1900.
	Fine and Medium.	Coarse.			
Stocks, April 30.....	476	16 =	492	904	850
Arrivals, May.....	767	273 =	1040	1155	569
Aggregating.....	1243	289 =	1536	2149	1419
Deliveries, May.....	703	277 =	980	1254	790
Stocks, May 31.....	540	12 =	552	895	629

	PARÁ.			ENGLAND.		
	1902.	1901.	1900.	1902.	1901.	1900.
Stocks, April 30.....	2240	170	790	170	1425	1870
Arrivals, May.....	*1580	1165	1755	2865	600	555
Aggregating.....	3820	1335	2545	3035	2025	2425
Deliveries, May.....	3740	1185	1955	960	675	750
Stocks, May 31...	80	150	590	2075	1350	1675

[\* Caucho arrivals, in addition, 500 tons.]

	1902.	1901.	1900.
World's supply, May 31.....	3,650	3,102	3,959
Pará receipts, July 1 to May 31.....	25,494	22,911	25,205
Pará receipts of Caucho, same dates .....	3,236	2,383	
Afloat from Pará to United States, May 31..	533	377	233
Afloat from Pará to Europe, May 31.....	410	330	832

[Advices to June 26 stated that arrivals at Pará since the first of June had amounted to 860 tons of Rubber and 255 tons of Caucho.]

## Manaos Rubber Arrivals From Amazonas State.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Contrary to all expectations, the yield of rubber from this state was larger in April, 1902, than in the same month in either of the two years preceding. The arrivals have also been larger during the first four months of the year than in the same period of the preceding years. The details are shown in this table, weights being expressed in kilograms:

FROM RIVERS.	January.	February.	March.	April.	Total.
Purús.....	1,886,449	1,417,952	1,120,436	484,214	4,909,051
Juruá.....	869,670	326,103	644,975	526,818	2,367,566
Solimões....	221,778	156,741	350,927	61,750	791,196
Madeira.....	254,346	418,809	337,327	164,596	1,175,078
Others.....	102,271	75,575	61,444	41,613	280,903
Total.....	3,334,514	2,395,180	2,515,109	1,278,991	9,523,794
Total, Four months, 1901.....					8,260,558
Total, Four months, 1900.....					8,970,833

It will be noted that the yield of the zone of the Solimões, including the Japurá, Caqueta, Badajos, and Autaz, shows a marked decrease, as had been predicted. The only reason that can be given for the very marked increase in yield of the Juruá, Purús, and Madeira, is that the rubber cutters of those regions, unable to visit Manáos, and there spend their money freely, as they usually do, had to remain up river gathering rubber. Persons who have just returned from those districts report that several new zones hitherto neglected on account of their comparatively small yield per *estrada*, have been worked this year. Arrivals from "other rivers" include a good deal of caucho from the Putumayo, which is gradually being opened up by the Peruvians.

L. G.

Manáos, Brazil, May 5, 1902.

## Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Since the sale of May 22 transactions in rubber have been limited. A small sale by inscription was held on June 9, when 13 tons

were sold out of 34 tons exposed, prices showing no change. A lot of Ikelemba of fine quality sold at 7.50 francs; another of inferior quality at 6.65 francs. The next sale, comprising 367 tons, chiefly Congo grades, is announced for July 3. Among the principal lots to be offered are:

	Valuation.
20 tons Upper Congo cut balls.....	francs 6.85
23 " Upper Congo strips.....	6.10
14 " Congo Djuma.....	5.
23 " Aruwimi.....	5.25
32 " Uellé strips.....	5.50
32 " Upper Congo small strips.....	6.10
23 " Mongalla strips.....	6.25
23 " Lopor I.....	6.75
7 " Lopor II.....	5.50
15 " Lomami small round strips.....	7.

C. SCHMID &amp; CO.

Antwerp, June 17, 1902.

## RUBBER STATISTICS FOR MAY.

DETAILS.	1902.	1901.	1900.	1899.	1898.
Stocks, Apr. 30..kilos	500,664	813,818	821,820	521,303	186,246
Arrivals May.....	537,536	356,915	445,662	520,822	79,922
Congo sorts.....	489,008	315,383	346,448	184,738	73,107
Other sorts.....	47,634	41,533	98,614	36,084	4,815
Aggregating.....	1,038,200	1,170,733	1,266,882	742,125	266,168
Sales, in May.....	573,525	346,291	389,256	238,775	75,905
Stocks, May 31..	464,675	825,442	877,626	503,350	190,263
Arrivals since Jan. 1	2,346,859	2,543,593	2,729,287	1,430,686	741,523
Congo sorts.....	2,188,328	2,367,238	2,541,718	1,234,284	643,037
Other sorts.....	158,531	176,355	187,569	196,402	98,486
Sales since Jan. 1..	2,296,893	2,338,190	2,143,652	1,190,676	645,823

## ARRIVALS AT ANTWERP.

MAY 23.—By the *Philipville*, from the Congo:

Bunge & Co.....(Société Générale Africaine) kilos	144,000
Bunge & Co.....(Comité Spécial Katanga)	1,900
Bunge & Co.....(Société Anversoise)	29,000
Bunge & Co.....(Plantations Lacourt)	7,000
Bunge & Co.....(Société Isanghi)	2,000
Ch. Dethier.....(Société la Loanje)	7,000
Ch. Dethier.....(La M'Poko)	380
Société Equatoriale Congolaise.....	6,000
Société A B I R.....	34,000
M. S. Cols.....(Centrale Africaine)	5,000
M. S. Cols.....(Société L'Ikelemba)	1,000
Société Coloniale Anversoise.....(Société La Djuma)	10,000
Société Coloniale Anversoise (Cie. des Mag. Généraux)	2,500
Société Coloniale Anversoise.....(Cie. de Lomami)	13,000
Société Coloniale Anversoise.(Belge du Haut Congo)	15,000
W. Mallinckrodt & Co.....(Alimaïenne)	5,000
	282,780

JUNE 11.—By the *Anversville*, from the Congo:

Bunge & Co.....(Société Générale Africaine) kilos	162,700
Bunge & Co.....(Société Anversoise)	43,500
Bunge & Co.....(Société Isanghi)	14,400
Bunge & Co.....(Comité Spécial Katanga)	11,049
Bunge & Co.....(Plantations Lacourt)	13,000
M. S. Cols.....(Centrale Africaine)	6,000
M. S. Cols.....(Vegetaux Kassai)	14,000
M. S. Cols.....(Société L'Ikelemba)	300
Ch. Lethier.....(Société Beligika)	5,700
Société A B I R.....	13,000
Comptoir Commercial Congolais.....	5,300
Société Coloniale Anversoise.....(Belge du Haut Congo)	18,700
Société Coloniale Anversoise.....(Cie. de Lomami)	10,900
Société Coloniale Anversoise.(Cie. Française du Haut Congo)	800
Société Coloniale Anversoise (Cie. des Mag. Généraux)	2,300
Société Coloniale Anversoise.....(Süd Kamerun)	2,000
Comptoir des Produits Coloniaux (Cie. de Ekela Sanga)	2,100
W. Mallinckrodt & Co.....(Alimaïenne)	7,400
	333,149

## Hamburg.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The tendency in the crude rubber market during the past week for Pará sorts became weak and holders were inclined to be easier,

which led to a few transactions in fine Pará, hard cure, spot and delivery, at M 6.60. Transactions in fine Bolivian, owing to the high price ideas of the importers, were almost entirely absent. Scrappy negroheads were asked for in vain. A small lot of fine Mollendo, spot, was taken out of the market at secret prices. Middle sorts, also, took on a more subdued tone, and transactions are less animated, but no material quantities are stored up, and arrivals of fair quality are readily disposed of. Inferior sorts receive no attention whatever, and, at firm offers, can be had to advantage. A shortage is complained of in Ceará, Mangebeira, Mozambique (fine sorts), and in Ecuador and Colombia scraps, strips, and sheets. Sales have been at the following prices in marks per kilogram:

Mozambique balls,	Congo thimbles, black. @ 4.80
fine.....M. 6.10 @ 6.15	Congo thimbles, red. .2.65 @ 2.70
Mozambique balls,	Adeli balls, red, fine..6.20 @ 6.25
good.....5.85 @ 5.90	Adeli balls, red, poor..5.80 @ 5.85
Mozambique balls,	Batanga balls, small..3.80 @ 3.85
black.....4.25 @ 4.35	Gold Coast lumps.....3.25 @ 3.30
Massal niggers, red...5.75 @ 5.75	Gold Coast pressed
Soudan niggers.....5.40 @ 5.50	biscuits.....4.15 @ 4.20
Soudan twist.....5.40 @ 5.50	Borneo, white first....4.70 @ 4.75
Hamburg, June 10, 1902.	

## Liverpool.

WILLIAM WRIGHT & Co. report [June 2]: "Fine Pará.—There has been an active demand, with slight fluctuations, but at the close prices are 1d. per pound, below last month. A good deal of manipulation has been going on which, in the absence of general trade demand, has been successful. In our opinion there is nothing in the actual situation of this grade, especially if compared with prices ruling for medium kinds, to justify these low prices, but as long as there is no general support the market will be left at the mercy of manipulators; very little would turn the scale. Sales on spot total 185 tons, but a good deal of this has been by way of exchange—i.e. buying forward against selling spot, closing price being 3s. An active demand forward, especially for hard cure at current rates; this is partly due to the belief that the Americans, at their present rate of consumption, may have to cover their surplus requirements on this side later on. There is some foundation for this if their present stock is taken into account, and it must be borne in mind that for the first time the stock of the Crude Rubber Co. is included in the return."

## London.

EDWARD TILL &amp; Co., under date of June 1, report stocks:

	1902.	1901.	1900.
LONDON { Pará sorts.....	—	—	—
Borneo.....	121	168	117
Assam and Rangoon.....	23	40	40
Other sorts.....	432	528	465
Total.....	576	736	622
LIVERPOOL { Pará.....	2084	1355	1674
Other sorts.....	1027	1411	1328
Total, United Kingdom.....	3687	3502	3624
Total, May 1, .....	3788	3597	3952
Total, April 1 .....	3326	3522	3104
Total, March 1.....	3078	2949	1917
Total, February 1 .....	2674	3129	1848
Total, January 1.....	2794	2901	1855

[\* Corrected.]

## PRICES PAID DURING APRIL.

	1902.	1901.	1900.
Pará fine, hard .....	2/11½ @ 3/1½	3/8 @ 3/10½	3/8½ @ 4/2½
Negroheads, scrappy... ..	2/5	2/7½ @ 2/8	2/8½ @ 2/11½
Do Islands .....	1/11½	2/2½	2/4½
Bolivian .....	3/0½	No sales.	No sales.

ADVICES under date of June 15 are that the market for Pará had shown renewed firmness, owing to less pressure to sell,

and prices had recovered  $\frac{1}{4}$  d. per pound, at which a good business had been effected, including fine Bolivian on the spot and near delivery at 3s. @ 3s.  $\frac{1}{4}$  d. and medium at 2s. 10d. @ 2s. 10 $\frac{1}{2}$  d.; fine hard cure Pará spot at 2s. 11 $\frac{1}{2}$  d. @ 2s. 11 $\frac{1}{2}$  d. and forward at 3s. @ 3s.  $\frac{1}{4}$  d.; also medium at 2s. 9 $\frac{1}{2}$  d. @ 2s. 10d. In soft cure, a moderate business had been done for near and distant delivery, at 2s. 11 $\frac{1}{4}$  d. and medium at 2s. 9 $\frac{1}{2}$  d. Negroheads had been quiet, with little doing. Peruvians had been quiet, with small sales of ball, fine clean at 2s. 5 $\frac{1}{2}$  d. and fair at 2s. 4 $\frac{1}{2}$  d. Slab sold at 1s. 11d. No auctions were held during the week and privately African grades were quiet, though firm.

## IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

June 14.—By the steamer <i>Hilary</i> , from Manáos and Pará:				
New York Commercial Co.	157,300	36,000	116,000	8,500= 317,800
Reimers & Co.	31,800	23,500	51,900	41,300= 108,500
A. T. Morse & Co.	84,800	25,200	77,800	8,600= 196,400
L. Johnson & Co.	39,600	5,700	9,300	.....= 54,600
William Wright & Co.	.....	.....	6,900	.....= 6,900
Boston Rubber Shoe Co.	.....	.....	14,500	.....= 14,500

## PARA RUBBER VIA EUROPE.

MAY 27.—By the <i>La Gascogne</i> =Havre:		
A. T. Morse & Co. (fine)	7,600	
A. T. Morse & Co. (coarse)	10,200	
A. T. Morse & Co. (Cauché)	26,000	43,800
MAY 31.—By the <i>Lucania</i> =Liverpool:		
William Wright & Co.	.....	22,600

## OTHER IMPORTS AT NEW YORK.

## CENTRALS.

MAY 26.—By the <i>Comus</i> =New Orleans:		
A. T. Morse & Co.	.....	9,000
MAY 27.—By the <i>Orizaba</i> =Colon:		
Hirzel, Feltman & Co.	9,400	
G. Amsinck & Co.	3,300	
A. Santos & Co.	3,100	
American Trading Co.	1,400	
Dumarest & Co.	1,330	
J. Ferro	1,000	
Lawrence Johnson & Co.	500	
R. Fabelin & Co.	500	20,500
MAY 31.—By the <i>Lucania</i> =Liverpool:		
Reimers & Co.	.....	3,200
JUNE 2.—By the <i>Carib II</i> =Truxillo:		
Eggers & Heinlein	13,400	
J. W. Wilson & Co.	1,400	
H. W. Peabody & Co.	1,300	
G. Amsinck & Co.	800	
A. S. Lascellas & Co.	300	17,200
JUNE 3.—By the <i>El Valle</i> =New Orleans:		
Manhattan Rubber Mfg. Co.	6,700	
Eggers & Heinlein	500	
A. T. Morse & Co.	1,300	8,400
JUNE 2.—By the <i>Havana</i> =Mexico:		
E. Stelger & Co.	3,000	
Graham, Hinckley & Co.	2,500	
H. Marquardt & Co.	2,000	
P. Harmony Nephews Co.	1,300	
F. Probst & Co.	1,000	
Samuels Brothers	500	
Harburger & Stack	400	
For Europe	4,500	15,100
JUNE 3.—By the <i>Alene</i> =Greytown:		
E. B. Strout	6,500	
A. D. Straus & Co.	2,700	
Andreas & Co.	2,500	
G. Amsinck & Co.	1,500	
Lawrence Johnson & Co.	1,600	
D. A. De Lima & Co.	3,000	17,800
JUNE 3.—By the <i>Matanzas</i> =Mexico:		
Graham Hinckley & Co.	2,500	
H. Marquardt & Co.	1,500	
E. Stelger & Co.	300	4,300
JUNE 4.—By the <i>Coleridge</i> =Bahia:		
J. H. Rossbach & Bros.	9,000	
August Stumpf	1,200	10,200
JUNE 4.—By the <i>Advance</i> =Colon:		
G. Amsinck & Co.	6,200	
Isaac Brandon & Bros.	2,700	
Hirzel, Feltman & Co.	2,000	
Eggers & Heinlein	2,000	
A. Santos & Co.	1,300	
Dumarest & Co.	800	
A. D. Straus & Co.	600	

## CENTRALS—Continued.

Pomares & Cushman	400	
R. G. Barthold	400	
Joseph Hecht	300	16,700
JUNE 9.—By the <i>El Rio</i> =New Orleans:		
A. T. Morse & Co.	2,200	
L. Johnson & Co.	1,200	
D. A. De Lima & Co.	1,200	4,600
JUNE 12.—By the <i>El Dia</i> =New Orleans:		
A. T. Morse & Co.	11,000	
Samper & Co.	2,500	
For Europe	3,000	16,500
JUNE 12.—By the <i>Patricia</i> =Hamburg:		
Harburger & Stack	1,800	
Robinson & Tallman	1,600	3,400
JUNE 16.—By the <i>Vigilancia</i> =Mexico:		
E. Stelger & Co.	3,000	
Thebaud Brothers	1,000	
Graham, Hinckley & Co.	500	4,500
JUNE 17.—By the <i>Financé</i> =Colon:		
American Trading Co.	6,200	
Hirzel, Feltman & Co.	3,800	
G. Amsinck & Co.	1,700	
D. A. De Lima & Co.	1,700	
Joseph Hecht	1,000	
Eggers & Heinlein	800	
R. Fabelin & Co.	800	16,000
JUNE 17.—By the <i>Athos</i> =Greytown:		
E. B. Strout	6,500	
Andreas & Co.	600	
A. D. Straus & Co.	600	
G. Amsinck & Co.	100	
D. A. De Lima & Co.	3,000	10,800

## AFRICANS.

MAY 26.—By the <i>Umbria</i> =Liverpool:		
George A. Alden & Co.	11,500	
A. T. Morse & Co.	11,000	
Livesey & Co.	6,500	
William Wright & Co.	2,000	
Robinson & Tallman	5,000	36,000
MAY 26.—By the <i>Potsdam</i> =Rotterdam:		
A. T. Morse & Co.	.....	18,500
MAY 27.—By the <i>Zeeland</i> =Antwerp:		
George A. Alden & Co.	21,000	
A. T. Morse & Co.	3,000	24,000
MAY 28.—By the <i>Nomadic</i> =Liverpool:		
Reimers & Co.	22,500	
Otto Meyer (Boston)	15,500	38,000
MAY 31.—By the <i>Lucania</i> =Liverpool:		
Reimers & Co.	11,000	
A. T. Morse & Co.	5,500	16,500
JUNE 2.—By the <i>Pretoria</i> =Hamburg:		
A. T. Morse & Co.	8,000	
Otto Meyer (Boston)	3,500	11,500
JUNE 3.—By the <i>Friesland</i> =Antwerp:		
A. T. Morse & Co.	.....	20,000
JUNE 3.—By the <i>Molthe</i> =Hamburg:		
George A. Alden & Co.	11,500	
William Wright & Co.	4,000	
Otto Meyer (Boston)	1,600	16,500
JUNE 6.—By the <i>Germanic</i> =Liverpool:		
A. T. Morse & Co.	6,000	

## AFRICANS—Continued.

JUNE 9.—By the <i>Etruria</i> =Liverpool:		
George A. Alden & Co.	.....	20,000
JUNE 9.—By the <i>Boric</i> =Liverpool:		
Otto Meyer (Boston)	.....	20,000
Mark Hydes & Co.	.....	2,500
22,500		
JUNE 11.—By the <i>Southwark</i> =Antwerp:		
George A. Alden & Co.	.....	235,000
Reimers & Co.	.....	10,000
A. T. Morse & Co.	.....	9,000
For Boston	.....	59,000
304,500		
JUNE 12.—By the <i>Patricia</i> =Hamburg:		
Reimers & Co.	.....	22,000
George A. Alden & Co.	.....	9,500
Otto Meyer (Boston)	.....	11,000
William Wright & Co.	.....	4,500
Robinson & Tallman	.....	4,500
51,500		
JUNE 12.—By the <i>Teutonic</i> =Liverpool:		
A. T. Morse & Co.	.....	29,500
Mark Hydes & Co.	.....	2,500
32,000		
JUNE 16.—By the <i>Vaderland</i> =Antwerp:		
A. T. Morse & Co.	.....	25,000
New York Commercial Co.	.....	1,000
26,000		
JUNE 18.—By the <i>Blucher</i> =Hamburg:		
A. T. Morse & Co.	.....	20,000
Reimers & Co.	.....	20,000
George A. Alden & Co.	.....	2,000
Robinson & Tallman	.....	11,500
53,500		

[Frank W. Greene was mentioned last month as receiving 6500 pounds of Africans by the *Patricia* on May 8. This was an error, Mr. Greene being a broker and not an importer.]

## EAST INDIAN.

JUNE 6.—By the <i>Hullam</i> =Calcutta:		
Reimers & Co.	.....	6,000
JUNE 9.—By the <i>Hudson</i> =Singapore:		
Reimers & Co.	.....	11,000
J. W. Greene & Co.	.....	6,500
17,500		
JUNE 9.—By the <i>Etruria</i> =Liverpool:		
Reimers & Co.	.....	10,500
JUNE 10.—By the <i>Aragonia</i> =Singapore:		
D. P. Cruikshank	.....	8,000
JUNE 16.—By the <i>Philadelphia</i> =Southampton:		
Reimers & Co.	.....	22,500
JUNE 16.—By the <i>Minneapolis</i> =London:		
Otto Meyer (Boston)	.....	13,500
William Wright & Co.	.....	13,500
27,000		
PONTIANAK.		
JUNE 9.—By the <i>Hudson</i> =Singapore:		
Reimers & Co.	.....	425,000
R. Brans & Co.	.....	100,000
William Wright & Co.	.....	45,000
George A. Alden & Co.	.....	18,000
588,000		
JUNE 10.—By the <i>Aragonia</i> =Singapore:		
Reimers & Co.	.....	535,000
Robinson & Tallman	.....	45,000
580,000		
JUNE 16.—By the <i>Minneapolis</i> =London:		
R. Brans & Co.	.....	45,000

United States Rubber Co.	.....	6,800=	6,800
G. Amsinck & Co.	.....	200	1,900
.....	.....	.....	.....
Total	363,500	90,600	263,800
.....	.....	79,700=	797,600

June 4.—By the steamer *Benedict*, from Manáos and Pará:

IMPORTERS.				
	Fine.	Medium.	Coarse.	Cauché.
New York Commercial Co.	94,500	39,700	88,000	53,800= 276,000
Reimers & Co.	40,800	19,400	23,200	14,600= 98,000
A. T. Morse & Co.	28,400	6,200	32,700	3,700= 71,000
Boston Rubber Shoe Co.	.....	.....	37,800=	37,800
United States Rubber Co.	.....	.....	18,900=	18,900
William Wright & Co.	.....	.....	12,600	.....= 12,600
Total	163,700	65,300	156,500	128,800= 514,300

June 24.—By the steamer *Grangense*, from Manáos and Pará:

Reimers & Co.	65,000	12,100	42,200	47,500= 166,800
New York Commercial Co.	84,800	18,500	35,000	2,100= 140,900
A. T. Morse & Co.	8,700	6,500	37,500	17,400= 70,100
William Wright & Co.	.....	.....	8,200	.....= 8,200
Total	158,100	37,100	123,800	67,000= 386,000

[NOTE.—The Steamer *Bernard* from Pará, is due at New York July 5, with 100 tons of Rubber and 65 tons Cauché.]

## GUTTA-PERCHA AND BALATA

	POUNDS.		
JUNE 9.—By the <i>Hudson</i> =Singapore:		Gutta-percha.....	48,190
Reimers & Co.....	1,500	Gutta-jelutong (Pontianak) ...	1,102,576
R. F. Downing & Co.....	12,500	Total.....	5,207,839
JUNE 9.—By the <i>Blucher</i> =Hamburg:		Exports:	
Schrader & Ehlers.....	2,000	India-rubber.....	122,326
To Order.....	2,000	Reclaimed rubber.....	12,594
	4,000	Rubber Scrap Imported.....	1,370,274

## BALATA.

MAY 26.—By the <i>Menominee</i> =London:	
Earle Brothers.....	4,500
MAY 31.—By the <i>Prins Willem V.</i> =Suriman:	
G. Amsinck & Co.....	1,000
JUNE 9.—By the <i>Maracaibo</i> =Trinidad:	
George A. Alden & Co.....	17,000
G. Amsinck & Co.....	500 17,500

## CUSTOM HOUSE STATISTICS.

## PORT OF NEW YORK—MAY.

Imports:	POUNDS.	VALUE.
India-rubber.....	4,222,073	\$2,035,218

## BOSTON ARRIVALS.

	POUNDS.
MAY 1.—By the <i>Alexandria</i> =Hamburg:	
Otto Meyer—African.....	5,285
MAY 2.—By the <i>Ullonia</i> =Liverpool:	
Reimers & Co.—Coarse Pará.....	22,225
Reimers & Co.—African.....	8,897
Robinson & Tallman—African.....	9,100
George A. Alden & Co.—African.....	13,314
MAY 3.—By the <i>Friesland</i> =Antwerp:	
George A. Alden & Co.—African.....	49,352
MAY 11.—By the <i>Kansas</i> =Liverpool:	
Reimers & Co.—African.....	11,641

MAY 12.—By the <i>Southmark</i> =Antwerp:	
George A. Alden & Co.—African.....	54,938
MAY 15.—By the <i>Valencia</i> =Hamburg:	
Robinson & Tallman—African.....	5,502
MAY 17.—By the <i>Sachem</i> =Liverpool:	
George A. Alden & Co.—African.....	11,215
MAY 31.—By the <i>Sylvania</i> =Liverpool:	
Robinson & Tallman—African.....	11,306
Robinson & Tallman—Caucho.....	31,157
Total Imports.....	223,906
[Value, \$111,070.]	

## GUTTA-PERCHA.

MAY 5.—By the <i>Bostonian</i> =London:	
George A. Alden & Co.....	2,072
MAY 14.—By the <i>Columbian</i> =London:	
George A. Alden & Co.....	2,371
MAY 15.—By the <i>Valencia</i> =Hamburg:	
Robinson & Tallman.....	490
Total.....	4,743

## MAY EXPORTS OF INDIA-RUBBER FROM PARA.

IN KILOGRAMS. 1000 KILOGRAMS=2204.6 POUNDS.

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Cmok, Prusse & Co.....	30,991	4,427	32,836	—	68,254	60,311	9,763	11,274	1,670	83,018	151,272
Frank da Costa & Co.....	39,310	9,396	64,572	—	113,278	45,390	5,340	26,544	—	77,274	190,552
Adelbert H. Alden.....	84,020	22,136	97,111	1,986	205,253	59,203	6,407	18,886	—	84,496	289,749
Singlehurst, Brocklehurst & Co.	—	—	—	—	—	12,187	6,198	4,924	—	23,309	23,309
Kanthack & Co.....	—	—	1,032	—	1,032	16,692	6,805	4,786	—	28,283	29,315
Neale & Staats.....	—	—	—	—	—	336	—	260	430	1,026	1,026
Denis Crouan & Cie.....	—	—	—	—	—	3,952	526	4,017	—	8,495	8,495
R. Suarez & Co.....	—	—	—	—	—	42,398	8,520	4,529	1,841	57,288	57,288
Pires, Teixeira & Co.....	—	—	—	—	—	4,186	—	1,086	—	5,272	5,272
Sundry small shippers.....	—	—	—	—	—	—	—	102	951	1,053	1,053
Direct from Iquitos.....	—	—	—	—	—	22,890	2,546	15,222	102,725	143,383	143,383
Direct from Manáos.....	358,275	88,244	120,094	175,311	741,924	203,094	42,482	73,240	142,762	461,578	1,203,502
Total for May.....	512,596	124,203	315,645	177,297	1,129,741	470,639	88,587	164,870	250,379	974,475	2,104,216
Total for July-April.....	6,320,528	1,585,747	3,708,040	910,118	12,524,433	8,278,202	1,585,915	2,369,898	1,737,549	13,971,564	26,495,997
TOTAL, CROP YEAR.....	6,833,124	1,709,950	4,023,685	1,087,415	13,654,174	8,748,841	1,674,502	2,534,768	1,987,928	14,946,039	28,600,213

## OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1902.....	5,283,691	297,459	4,986,232	April, 1902.....	5,806,080	2,899,344	2,906,736
January-March.....	14,505,944	940,675	13,565,269	January-March.....	13,880,608	7,175,616	6,704,992
Four months, 1902.....	19,789,635	1,238,134	18,551,501	Four months, 1902.....	19,686,688	10,074,960	9,611,728
Four months, 1901.....	23,343,062	1,060,360	22,282,702	Four months, 1901.....	18,206,964	9,513,616	9,693,348
Four months, 1900.....	19,479,343	1,698,538	17,780,805	Four months, 1900.....	24,259,536	11,492,432	12,767,104

GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1902.....	2,896,520	596,200	2,300,320	April, 1902.....	144,760	nil	144,760
January-March.....	7,036,700	2,682,020	4,354,680	January-March.....	370,260	42,460	327,800
Four months, 1902.....	9,933,220	3,278,220	6,655,000	Four months, 1902.....	515,020	42,460	472,560
Four months, 1901.....	8,477,480	1,873,300	6,604,180	Four months, 1901.....	627,220	69,300	557,920
Four months, 1900.....	10,471,340	3,534,520	6,936,820	Four months, 1900.....	513,920	—	513,920

AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1902.....	275,900	660	273,240
January-March.....	642,620	1,320	641,300
Four months, 1902.....	916,520	1,980	914,540
Four months, 1901.....	762,080	7,040	755,040
Four months, 1900.....	—	—	—

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. Italian and Austrian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.





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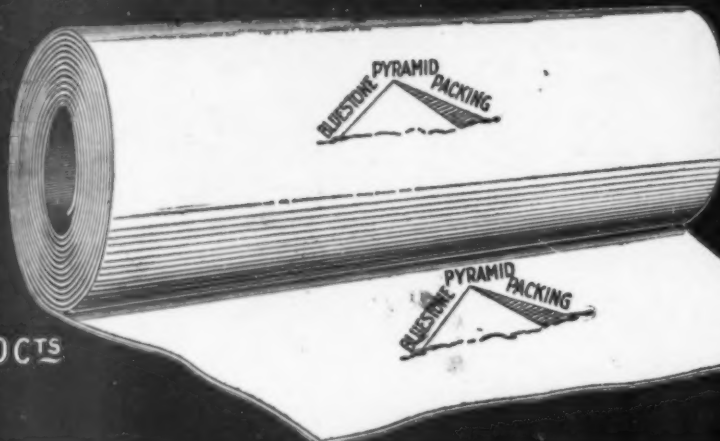
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